

Journal of CALENDAR REFORM

EDITORIAL—FIVE YEAR PLAN

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March 1951

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THE WORLD CALENDAR

1ST QUARTER

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3RD QUARTER

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W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days; 13 weeks; 3 months; each quarter is repeated four times.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" June, another world holiday in leap years.

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ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXI **FIRST QUARTER, 1951** **No. 1**

PLANNING is essential to the success of any project. No important journey is undertaken without a plan, no building is constructed without a blueprint, and no international conference is held without an agenda. Success depends upon how plans are made and followed. The same truth holds in calendar reform.

The World Calendar's adoption in the mid-century year of 1950 was postponed, perhaps because of insufficient planning beforehand and, in addition, because of international developments which were unpredictable. To assure the adoption of The World Calendar on the next appropriate date—Sunday, 1 January 1956 (when both the present and new calendars agree)—wise planning is vital.

Toward this end there is laid before the readers of this *Journal*, before members, affiliates and committees of The World Calendar Association, and before delegates of the United Nations and the Foreign Ministers of Member States—a Five-Year Plan for international action. Adoption of The World Calendar in 1956 depends in great measure upon the far-sighted carrying out of this plan.

1951—Official action by the United Nations Economic and Social Council (ECOSOC) at its Session in July, also with a request to the General Assembly to place the subject on the agenda for further consideration by all Member Nations.

1951—United Nations General Assembly to place the matter in committee at its Sixth Session in November, looking toward final action as soon as possible.

1952—United Nations General Assembly, at its Session in September, to give The World Calendar its official approval for adoption on Sunday, 1 January 1956.

1953—Governmental approval and preparation by all Nations.

1954-1955—Necessary legislative and civil preparation for the changeover.

With the installation of the perpetual World Calendar on Sunday, 1 January

1956, the present Gregorian calendar will be replaced and from that time the orderly and perpetual World Calendar will be the official calendar for everyone, everywhere.

To delay action through apathy, indifference and the belief that other things are more essential is not justifiable. The unwarranted economic cost and unreasonable waste of material, effort and labor, which the present Gregorian calendar exacts, compel immediate serious attention.

This is particularly true in the present strained and complicated economic situation of the world. Governments and peoples will be remiss indeed if they permit the economic waste of the present calendar to go unchecked. Reason and justice demand that remedial action be taken without further delay or postponement, particularly when the solution is at hand, waiting to be applied.

It has been repeatedly pointed out that international agreement on this improved calendar will foster greater world unity and cooperation. Important joint action by all the nations might well serve as a stimulant for similar joint action in other directions. World leaders believe that the operation of this unified calendar will prove a uniting force and an impressive example of general economic, social, scientific, cultural and religious benefits.

Any movement that encourages cooperation and unity should be welcomed as a peace offering in a distracted and torn world. The World Calendar is an unusual opportunity to apply this doctrine in the field of time-reckoning. Its adoption may easily prove a stepping stone to other constructive movements for the benefit of mankind.

In the past it has often been proved that international movements which aim at civilian benefits are likely to have far-flung consequences for the general good. Pertinent examples were the international humanitarian movement of the Red Cross, the political awakenings for national freedom resulting from the American Declaration of Independence, and the renouncing of slavery as expressed in the Emancipation Declaration. Such developments have brought important practical, moral and ethical benefits to the patterns of universal, civilian and national life. In the words of Gandhi, men of good will are "always ready to endorse any honest movement which will help to unify the peoples of the world."

All classes of people, in every land and country, should do their utmost to bring The World Calendar to the attention of their governments, the United Nations, business, influential organizations and individuals. Here is a cause that is non-political in character and unbiased in purpose. Unswerving perseverance and full cooperation on the Five-Year Plan will assure the 1956 adoption of The World Calendar—a worthwhile and world-wide undertaking, calling for everyone's best and most earnest endeavor. The favorable acceptance of The World Calendar by the United Nations will undoubtedly prove an effective force for international unity and understanding. History will be able to acclaim for all time a momentous and beneficial achievement, one that will bring increasing benefits with the passing of the years.

Journal of

CALENDAR REFORM

MARCH 1951

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CATHOLIC VIEWPOINT

From the National Catholic Almanac, 1951

THE year is composed, roughly, of 365¼ days. In our Gregorian calendar the extra quarter of a day is set aside until every fourth year, which then counts 366 days instead of 365, and becomes a leap year.

Neither 365 nor 366 is exactly divisible by 7, the number of days in a week. Hence, successive years begin on different days and have different patterns. To remedy this, various reforms have been suggested.

One general class of such suggestions would give each year 364 days, and instead of counting the extra days (two days in leap years) in the ordinary line-up of weekdays, the extra day (or days) would be sequestered, so to speak, and given a name of its own. Every year would then consist of 52 full weeks, plus one or two extra or stabilizing days—the World Holidays, which would be civil in character. This arrangement would make every year begin on the same day, and give every day of each month the same date in successive years.

The plan of 12 months with its extra or stabilizing days was first proposed in its essential features by a Catholic priest, Marco Mastrofini, who published a work on it in Rome in 1834. The World Calendar is an improvement on this plan, having equalized the quarter-years. Now widely recognized as a calendar authority, The World Calendar Association is located at 630 Fifth Avenue, New York City.

The World Calendar produces symmetry by giving each quarter of the year three months with respectively 31, 30 and 30 days. Every year begins on Sunday, as does every quarter. In many cases, dates in the new calendar, when paralleled with the old, are the same; there is never a difference of more than two days. The added day in ordinary years, called Worldsday, follows 30 December. The second additional day of leap years, called Leapyear Day, follows 30 June. Both days would be world holidays. Seventeen nations have approved, and 24 others have indicated their readiness to accept The World Calendar contingently upon its adoption by a major power.

Easter could be fixed in The World Calendar for Sunday, 8 April. While Easter stabilization has economic and social aspects, it is predominantly a religious question and one that must be dealt with by religious authorities. The rearranging of the calendar need not, therefore, of necessity imply the fixing of movable ecclesiastical feasts. Many religious authorities, including Catholic priests and scholars, find no basic difficulty in the idea of one or two stabilizing days. The Vatican has declared that there are no dogmatic objections to calendar reform. This statement seems to cover both fixation of movable feasts and use of the World Holidays.

IT'S TIME TO MODERNIZE OUR ANTIQUATED SYSTEM

Abstracted from a book by Paul Couderc, Astronomer of the Paris Observatory

Already in its second edition, Professor Couderc's textbook on Le Calendrier is a readable and comprehensive study of calendar history, with a keen application to current proposals for calendar reform. Published by the University Presses of France (108 Boulevard Saint-Germain, Paris), it is one of a series of 300 volumes for college use, dealing with such current topics as Atomic Energy, The Economics of American Life, History of Soviet Russia, Progress of Social Security, Psychological Warfare and Development of Marxism. Three of Professor Couderc's earlier books, Univers 1937, La Relativité 1942, and l'Expansion de l'Univers 1950, were crowned by the French Academy of Sciences. The popularity of his writings is evidenced by the fact that this volume on the calendar called for initial printings of 15,000 copies.

IN the comedies of Molière the most piquant personality is M. Jourdain, the *bourgeois gentilhomme* whose unbounded faith in education is perhaps his most lovable and amusing characteristic. On one unforgettable occasion, M. Jourdain is worrying volubly about the gaps in his education. "For instance," he remarks, "my philosophy teacher never taught me the calendar."

The theatre audience always laughs at the notion that a teacher of philosophy should stoop to such minor matters as the simple kitchen calendar which everybody uses. Teach the calendar? Why teach something that any child learns automatically while still at toddling age?

Yet M. Jourdain's suggestion, when viewed soberly, is a reasonable one. It is also quite difficult to carry out. Anyone who undertakes it will find himself tongue-tied when asked some very elementary questions. I doubt whether M. Jourdain's philosophy teacher would have been able to get very deep into the details of the subject.

To understand the calendar, one must go far afield—into the sciences, into anthropology and universal history, into higher mathematics and psychology, into religion, folklore and superstition. And in all these branches of knowledge, the history of the calendar is fogged with tradition and mythology; the information is incomplete, or suspect, or even contradictory.

Our calendar is no simple matter. Since history began, men have used many different kinds of calendars, measuring time perhaps by the sun, or by the moon, or by some artificial standard they have devised. In most cases, the general plan is not difficult to understand—the student needs only a smattering of astronomy and mathematics, plus infinite patience. But the detailed machinery of each system be-

comes subtle, irrational and incongruous.

Nevertheless, the study of the calendar is interesting to everybody. I know few children or adults who cannot, in a few minutes, ask questions about it that will take considerable background to answer. Yes, that printed rectangle which hangs on the wall of even the humblest dwelling is really an enigma of paradox and mystery.

The calendar has the charm of old things. It is impregnated with a perfume of antiquity. Its foundations rest on an ancient astronomy which has long since vanished from our schoolbooks, but which survives incognito in our language and in our social customs, anchored in forgotten traditions and habits. It goes back twenty centuries and more, involving our modern life in a tangled web that is not only full of whimsy and extravagance, but is also complicated by unnecessary rules and conventions, whose operation is wasteful and annoying, reflecting in most cases the superstitions and ignorance of our remote ancestors.

Our present system of measuring time is tolerated only because we all become habituated to it from infancy. Like some of our antique furniture or the family relics which clutter the mantlepieces of our dwellings, our calendar is not exactly suited to current requirements. It has defects and inconveniences. Let us be open-minded in considering whether, without too much disturbance and without being disrespectful to the past, we can modernize it and remedy its most flagrant inadequacies.

The calendar we use is called "Gregorian," in honor of Pope Gregory XIII, who revised the old Julian system, and put his revision into effect in 1582. This excellent calendar, which has now reached a respectable old age, has faithfully carried out its duties for more than three centuries: it has served all the civilized nations and kept their lives precisely in step with the passing of the seasons.

But precision is not the only quality we require from a calendar, and there are certain defects in our existing system which have long drawn the attention of scholars and statesmen. The movement for a further revision has recently attracted such a wide following, and the advantages of the proposed changes are so important—along with the fact that they can be made with a minimum alteration of traditional usages—that the decision to enact the new system is now close at hand, and one may confidently predict the approaching end of the Gregorian calendar.

It is to be hoped that this impending revision will receive quicker approval from the nations of the world than the Gregorian change. Pope Gregory had many difficulties in getting acceptance. Italy, Spain, Portugal and Poland came along promptly; France was a few months behind. Germany, Holland and Switzerland waited a year or so; Hungary was tardy by four years. But in the Protestant nations, the delay was prolonged—a full century for Denmark and 170 years for England, America and Sweden. Even more obstinate were the followers of the Greek Orthodox faith—Russians, Greeks, Bulgarians and Yugoslavs. Their adoption of the Gregorian system was not achieved until the period of our recent World Wars.

Oddly enough, these Eastern Europeans, once they rallied to the Gregorian system, became ardent converts to calendar reform on a still wider basis. Having undertaken such difficult changes as the altera-

tion of their complicated church liturgy to the corresponding Gregorian dates, they grew calendar-conscious and quickly saw the advantages of further revisions. It is perhaps paradoxical that the nations which held out longest against the Gregorian reform are now the best-informed of all peoples on the subject of additional changes, and are found in the leading position as advocates of a "perpetual calendar" such as that now pending before the United Nations.

We have noted that the general public in all countries takes the present calendar for granted. People have become so habituated to it that they are not offended or shocked by its irregularities; by and large, they are not aware of the innumerable difficulties it imposes on them in their economic and social life. It seems to me that our schools and other educational facilities ought to lay great emphasis on showing the defects of the calendar; this indeed is the only way to gain popular adherence to the need for revision. Everybody should realize that all departments of social life and all branches of industrial and professional activity are bullied and injured by the complexities of the present system and will draw notable profits from its adaptation to modern needs.

What are the irregularities that can be most easily corrected? First we notice that the number of days in the months varies from 28 to 31, and the number of weekdays (or workdays) oscillates between 24 and 27, a relative difference of 12 per cent. In the face of such variations, what good are monthly statistics, which are the basis for all forecasting and planning in industry, construction and development? Neither production nor wages can be compared, month by month, without incessant adjustments which have to be done frequently by rule of thumb or guesswork. I have seen figures showing a fall in monthly production, when an adjoining table of daily production showed a rising trend.

A second serious and unnecessary difficulty with our calendar is the perpetual changing of the weekdays and the way they match up with a given month-date, such as 4 October. Year after year 4 October gets a different weekday designation, parading planlessly through seven categories. This aimless wandering is complicated by the leap-year day, which gets inserted every four years as an additional cause of disturbance. Thus we have 14 varieties of yearly calendars, each with a shifting arrangement of weekdays and month-dates.

The inconvenience of this arrangement is obvious. To know what weekday a given day-of-the-month fell last year, or will fall next year, one must undertake laborious calculations or obtain a printed calendar for the year in question. If a committee holds its monthly meeting on the 10th of each month, the secretary must go to some trouble every month to make sure that the date is not a Sunday, or a holiday, or any other day that will conflict with its session. If there is such a conflict, he must arrange for a change of the appointed date and make sure that the change is convenient for the members.

Some committees try to avoid this embarrassment by setting their monthly meetings on a fixed weekday, say the second Tuesday in each month. But here again the secretary is put to an inverse trouble, for in sending out his notices he must consult his calendar and identify the second Tuesday by its numerical posi-

tion in the month, making sure that it does not conflict with any holidays or other events that occur on that month-day.

The position of Sundays in each month adds an annoying factor to our calculations of past, present and future. Any month may have either four or five Sundays. That changes the number of weekdays, and the number of working days. If Saturday is not a working day, there are further complications; a month may have four or five Saturdays. Put Saturdays and Sundays in the same category, and a month may have from eight to ten of these non-productive days.

The wandering of the month-days in the weeks affects their comparability for such important weekly statistical tabulations as sickness and mortality, meteorology, banking and others. The position of holidays in the calendar is particularly annoying, and this is further complicated by the presence of wandering observances such as the church dates that depend on Easter. When a popular holiday falls on Sunday, people must observe it on the following Monday or lose the extra leisure which the holiday has promised them. When a holiday falls on Tuesday, workers are tempted to take a day off on Monday and thus gain a long week-end for travel or recreation. In every case, a new decision has to be taken each year, and this prevents our establishing definite rules to meet all such holiday exigencies. If we had a perpetual calendar, you would see how quickly industry and government would stabilize these situations, to the benefit of everybody.

It would be easy to go on with these criticisms of our present calendar—to speak of its inconveniences to science and the arts, to schools and churches, to transportation agencies and various branches of government. It is evident that science requires uniform time periods for its work. The calculations of navigation are complicated, and it takes hundreds of pages of intricate tables to match the stars and the calendar.

For the time being, it is sufficient to show to the general public that our present time system is antiquated and impractical. I trust we may set down as an axiom that the calendar is our servant and not our master, and that we have a right to the most convenient calendar we can devise. The heavens have imposed on us certain units of time, but it is for us to decide how we shall use them and how we shall divide them. The division of time into convenient units is exclusively our job, not the job of the sun, or the moon. Up until the present, this job has always been done imperfectly. And perfection is not yet within our ken. But we can reach for it, and come closer than in the past. We can apply all our wisdom and our improved scientific knowledge to ameliorating the imperfections that exist. Civilization keeps moving forward, imposing upon us the duty of adapting our time measures to the new economic and social life which our remote ancestors, the old-time calendar makers, could not envision.

All the ancient calendars were geared to an agricultural life, and one in which all farm labor was a proposition of man power. Today the farming industry has changed greatly. Agriculture is being mechanized to a vast degree. Its rhythm is faster and the farmer often bears more resemblance to an engineer than to Millet's *Man with the Hoe*. Modern farmers need a new pattern of days, a perpetual calendar, as much as men in factory or office

In recent years, when students and statesmen have been earnestly devoting themselves to calendar revision, they have generally agreed upon the adoption of a suggestion made in 1834 by the Italian Abbé Mastrofini. His proposal was that the calendar be made perpetual by taking the last day of the year out of its weekday sequence and treating it as an extra holiday, without a weekday name. The effect of this device is almost miraculous. It leaves a year of 364 days, or exactly 52 weeks. Thus, without much disturbance or upset, the yearly calendar becomes perpetual: each year has the same arrangement of weekdays. The annual printing of new calendars every year becomes unnecessary, for every year is identical.

This is the crux of the proposed new calendar. In France, the change was advocated long ago by such pioneers as Flammarion; more recently the English became enthusiastic supporters, and the Americans even more so, with a special quarterly journal of wide circulation devoted solely to promoting this reform and researching its advantages.

While we are adopting this supreme advantage of a perpetual and unchanging year, we shall also make a few minor changes in the lengths of the months, in order to equalize the quarter-years. This will result in quarterly calendar units which are identical in make-up, an advantage of great value.

Here is the sum total of the new calendar. The revision will have to be set in motion on a year which commences with Sunday, because in this case the transition will be almost imperceptible. When one looks at the past and recalls the violence of the transition period when nations switched to the Gregorian reform —because it abruptly cut off ten days and even changed the year, breaking all continuity with the past—we may say that the impending calendar change is mild in comparison. It marks a normal evolution, rather than a revolution.

There are a few small religious sects of Sabbatarians who are energetically opposing calendar reform, on the ground that it will disturb the rhythm of the week on which they place great emphasis. They resist the notion of Mastrofini's stabilizing day, and insist that this device will impose on them an eight-day week once yearly, thereby breaking the seven-day routine which they believe has endured since the Creation. It is difficult for a man of science to take their objection seriously. If a Sabbatarian took a trip around the world, in the manner of Phineas Fogg, or in the opposite direction, he would be forced to observe either a six-day week or an eight-day week as a result of his travels.

This is a matter, I think, in which one must observe the spirit of the law, rather than the letter. The acceptance of a stabilizing day does not seem very different from the acceptance of the additional hour involved in Daylight Saving, or the repeated extra hours that one accepts during a long airplane flight across the Atlantic or the Pacific.

Standard Time, now in use for more than half a century, and the principle of hourly changes at intervals of fifteen degrees longitude, were precursors of the perpetual calendar. Before their adoption, they encountered the same kind of opposition. Shall we renounce progress, and continue to suffer under the bullying of a worn-out and costly time system, just from courtesy to an obstinate minority?

LESSONS FROM STANDARD TIME

By Carlton J. Corliss
Association of American Railroads, Washington, D. C.

For those interested in the legislative processes whereby a revision of the calendar can be effected, there are certain related parallels and precedents in the way our modern system of Standard Time was adopted. The cooperative organizations which brought about Standard Time continue in existence today as parts of the work of the Association of American Railroads. Through this organization, the railroads are now working together on a wide-range program of research, development and standardization. It is not without significance that many railroad executives have shown an awareness of the deficiencies of our present Gregorian calendar and the need for revision. Support for calendar reform will come naturally, both here and abroad, from railroad men, because their business makes them acutely time-conscious.

WITH the possible exception of the change from the Julian calendar to the Gregorian calendar in the 16th century, no time reform has been of greater significance than the adoption of Standard Time, whereby clocks and watches are regularized to an hourly system of changes based on a geographical succession of meridians, 15 degrees apart. Establishment of Standard Time, in 1883, had a more far-reaching influence upon the habits of the human race than any other time-reckoning reform in modern history.

Like many other improvements, Standard Time—which brought order out of a confusing system of local times—has come to be taken for granted. Although it regulates the lives and habits of countless millions of people, little thought is given as to how it came about. But it was through the joint efforts of the American and Canadian railroads, working together to improve their service—and for 35 years without Federal legislative authority—that our orderly method of reckoning clock-time was instituted.

Time is indeed the essence of all things, and nowhere is this more true than in railway operations. At the very foundation of efficient railway service are the "time schedules." It would be almost impossible to overstate their importance in railway operations, for every train must move and meet and pass and arrive and depart in accordance with the dispatcher's orders or a definite timetable.

Imagine what could happen if the train dispatcher, the man in the signal tower, the conductor, the locomotive engineer, the switchman and every other person connected with the railroads were suddenly to be deprived of their watches and time schedules. The chaos and confusion that would inevitably result would be nothing short of a calamity.

But confusion did reign, at one time, however, for prior to 1883 there were nearly a hundred different time zones in the United States. In an effort to correct



Mr. Corliss is one of the country's ablest railroad historians. His recent best-selling book, "Main Line of Mid-America," is the story of the Illinois Central Railroad, now celebrating its 100th birthday.

the prevailing perplexities, the railroads sponsored the idea of a uniform standard time, which was finally adopted on Sunday, 18 November 1883.*

In order to appreciate the significance of Standard Time, we must understand the conditions which existed prior to 18 November 1883. Then the only "time" that existed in this country was local time, or "solar time," which was based upon the passage of the sun across the meridian, and which varied in the latitude of Chicago approximately one minute for every 13 miles or one second for every 1,140 feet of longitude.

If a person standing at the end of the Chicago Municipal Pier and another person standing at the Chicago North Western Station, on West Madison Street, each had his watch adjusted to exact local, or "sun time," the second hands of these two watches would differ by about 10 seconds. Sun time at the eastern and western extremes of Chicago differs by about 67 seconds. It differs about 5 seconds at the two ends of Brooklyn Bridge. From the Capitol Dome in Washington to the Lincoln Memorial there is a difference of 7 seconds.

So, of course, such a thing as true local or "sun" time was never observed at all points in the country. This would have led to unending confusion, because the longitudinal variation is constant. Moreover, owing to the eccentricity of the earth's orbit, there is a seasonal variation of several minutes, so that exact sun time at a given point on the earth's surface in January will not correspond to exact sun time at the same location in April or August or November.

But each of numerous cities or towns adopted a time standard which was based upon mean local sun time at the city hall or some other designated location. Many

*From an eminent authority on railroad law comes the following comment: "In studying the current proposal for calendar reform, it does not seem likely that the railroads, or any group of private citizens, can actually install a new calendar through informal action such as that which instituted Standard Time. Revision of the Gregorian calendar will require international agreements, carefully worked out in advance. But support for such action, whether in the Assembly of the United Nations or in one of its subsidiaries — such as ECOSOC — will come from a widespread network of organizations, among whom will be found many representatives of the time-conscious railroad industry. It is certain that railroad men will view with intelligent interest and sympathy every effort to improve our time measurement."

another city or town adopted the time standard of one of its railroads or of the principal city in its area. Each railroad adopted the time standard of its home city or of some other important city on its lines.

For instance, the Pennsylvania Railroad in the East used Philadelphia time, which was 5 minutes slower than New York time and 5 minutes faster than Baltimore time.

The Baltimore & Ohio used Baltimore time for trains running out of Baltimore, Columbus time for trains in Ohio, Vincennes time for trains running west of Cincinnati, and it scheduled some of its trains under New York time, Philadelphia time and Chicago time. The Michigan Central Railroad operated its trains on Detroit time. In the Chicago district, the New York Central (then the Lake Shore) and the Pennsylvania (then the Pan Handle) used Columbus time, which was 6 minutes faster than Cincinnati time and 19 minutes faster than Chicago time. Generally speaking, the railroads running westward and southward from Chicago used Chicago time; those running westward from St. Louis used St. Louis time.

When it was noon in Chicago, it was 12:31 in Pittsburgh; 12:24 in Cleveland; 12:17 in Toledo; 12:13 in Cincinnati; 12:09 in Louisville; 12:07 in Indianapolis; 11:50 in St. Louis; 11:48 in Dubuque; 11:41 in St. Paul; and 11:27 in Omaha.

The *Chicago Tribune* listed 27 local times in Michigan, 38 in Wisconsin, 27 in Illinois and 23 in Indiana.

There is no telling how many different "local times" there were in the entire country prior to the adoption of Standard Time, but we do know that there were at least 68 and perhaps 100 different times used by the railroads.

In the railroad station in Buffalo, there were three clocks—one set to New York time, by which the New York Central operated; one set to Columbus time, by which the Lake Shore and Michigan Southern and other railroads were operated; and the other set to local Buffalo time.

The situation was even worse in Pittsburgh, where there were six different time standards for the arrival and departure of trains.

A traveler going from Eastport, Maine, to San Francisco, if anxious to have correct railroad time, was obliged to change his watch some 20 times during his journey.

In Kansas City each of the leading jewelers furnished his own "standard time," and no two of these standards agreed. Sometimes the range was as much as 20 minutes. Each jeweler had his own customers who set their watches by his regulator and were willing to wager on the correctness of his time. According to one account, "the people of Kansas City never did have accurate information on the arrival and departure of trains, except such as was gained by going to the edge of the hill and looking down on the railway station."

Of course, with such multiplicity of time standards throughout the country, passengers and shippers, and railway officers and employees who were responsible for the operation of trains, the sale of tickets and the making of schedules, were confused and bewildered, the mistakes and errors were frequent and sometimes disastrous. According to the *New York Herald*, "The confusion of time

standards was the source of unceasing annoyance and trouble."

Proposals for a uniform time system were not new. As early as 1828, Sir John Herschel mentioned the value of standard time. On 6 December 1848, Greenwich mean time became the standard time of England, Scotland and Wales. One of the early advocates of standardization in this country was Professor C. F. Dowd of Saratoga, New York, who in 1869 proposed dividing the country into time zones, somewhat similar to what we have today. Several other scientific men advocated a uniform standard.*

Like Mark Twain's observation that there had been a great deal of talk about the weather but nothing had ever been done about it, nothing ever came of these proposals until the railroads took the matter in hand. The railroad movement may be said to have had its beginning on 14 May 1872, when the association which eventually became the Association of American Railroads held its first meeting at the old Southern Hotel in St. Louis. This was a meeting of railroad superintendents for the purpose of arranging a summer passenger train schedule. At the St. Louis meeting was formed the permanent organization which became successively the Time-Table Convention, the General Time Convention, the American Railway Association and finally the Association of American Railroads.

For many years the secretary of the General Time Convention and the American Railway Association was William F. Allen, managing editor of the *Official Guide*. In his capacity as Secretary of the General Time Convention, Mr. Allen worked untiringly for the adoption of Standard Time. In the waiting room of Union Station, in Washington, there is a large bronze tablet which gives William F. Allen the credit which is due him for his part in that very important achievement. Possibly another tablet would be appropriate—this one on the site of the once-famous old Grand Pacific Hotel, in Chicago—to commemorate the General Time Convention of 11 October 1883, which definitely adopted Standard Time.

The plan which was there adopted provided for five time zones—one, to be known as Intercolonial Time, in the Eastern provinces of Canada, and four in the United States, to be known as Eastern, Central, Mountain and Pacific Times. The four United States zones were based upon mean sun time on the 75th, 90th, 105th and 120th meridians west of Greenwich. These four meridians are approximately on the longitudes of Philadelphia, Memphis, Denver and Fresno. Having voted overwhelmingly for the adoption of the plan, the convention, through Secretary Allen, issued a notice, directing that all railway clocks governing the operation of trains throughout the United States be

*Among old-time railroad men, one of the earliest and most persistent supporters of a Standard Time system was the great Canadian engineer and publicist, Sir Sandford Fleming, builder of Canada's first transcontinental railroad. Born in Scotland in 1827, he had emigrated to Canada in his teens and had risen so rapidly that before 1867 he was the Dominion's chief engineer, with an international reputation as an expert in transportation problems. He designed the first Canadian postage stamps and was the foremost advocate of a government-owned system of telegraph and cable communications covering the whole British Empire. He was indefatigable in his promotion of a unified system of time reckoning, which had its first success when England about 1880 decreed that all clocks in the British Isles should be governed by Greenwich Time. His initiative was largely responsible for the interest of railroad men in the movement between 1872 and the final adoption of his system in 1883.

set to the new standard at exactly 12 o'clock noon, Sunday, 18 November 1883.

Detailed instructions and recommendations were issued, giving the exact changes which were necessary for the various railroad companies to adjust their clocks and watches to the new standard, and similar information was furnished various cities. It was realized that the success of the plan would depend largely upon the cooperation of cities and towns in adopting the new time locally, and this was stressed by the General Time Convention, the railway publications and the newspapers.

Change, whether for the better or not, is always repugnant to some persons. The greatest time-jump in all history was that from the Julian calendar to the Gregorian calendar. This change was adopted in all Catholic countries in 1582 though it was not accepted by the English-speaking countries of the world until 1752 when the 3d of September became the 14th of September.

And there were those in this country who felt that they were being robbed of some of their daylight, or that they were being compelled to reckon time "contrary to nature."

With regard to the public attitude toward this change at the time it was adopted, the newspaper accounts and editorial comments during the period immediately preceding and following the event are most revealing. For instance the cynical editor of the *Indianapolis Sentinel*, on 21 November 1883, had this to say: "Railroad time is to be the time of the future. The sun is no longer to boss the job. People—55,000,000 of them —must eat, sleep and work as well as travel by railroad time. It is a revolt, a rebellion. The sun will be requested to rise and set by railroad time. The planets must, in the future, make their circuits by such timetables as railroad magnates arrange.

"People will have to marry by railroad time, and die by railroad time. Ministers will be required to preach by railroad time—banks will open and close by railroad time—in fact, the Railroad Convention has taken charge of the time business and the people may as well set about adjusting their affairs in accordance with its decree. . . . We presume the sun, moon and stars will make an attempt to ignore the orders of the Railroad Convention, but they, too, will have to give in at last."

There were others who felt that the railroads or the watchmakers were trying to put something over on them for selfish reasons. On the day following the change of time, the *New York Herald* contained an interesting article which said: "Of course, no good comes along in this selfish and ungrateful world without having its motives suspected. And some people were unkind enough to believe that the whole affair was a mean and sordid device of the watch-makers. It was but natural to suppose that an alteration of time which would necessitate the setting of thousands of watches, and their subsequent subjection to the malignant arts of the watchmaker, was only a gigantic scheme of plunder contrived in his interest."

Five days before Standard Time was to go into effect, the Attorney General of the United States issued an edict that government departments had no right to adopt railroad time until authorized to do so by Congress. However, this edict did not prevent the railroads from putting Standard Time into effect. But apparently

the Attorney General could not or would not believe they would do it, for a few hours after Standard Time went into effect, he went to the railway station to take the train for Philadelphia and was greatly astonished to find that he was 8 minutes and 20 seconds too late.

On the day the change took place, a New York newspaper said: "The man who goes to church in New York today will hug himself with delight to find that the noon service has been curtailed to the extent of nearly 4 minutes, while every old maid on Beacon Hill, in Boston, will rejoice tonight to discover that she is younger by almost 16 minutes."

On the next morning, the same newspaper added: "Yesterday numbers of persons were thrown into a condition of frenzy by the discovery that their watches did not tally with indicators, and indulged in blasphemous and vituperative expressions before they recalled the chronological convulsions of the day. Full many a being dashed into a railway depot with fire in his eye and dyspepsia in his aspect only to find that he had run himself out of breath without reason, and had minutes to spare. Naturally those who had the event of the day in their minds talked about it. Preachers made it a theme in their pulpits. People joked about it; people fibbed about it; and altogether it afforded such food for Sunday gossip as is only offered by something that goes beyond the public pursuits of men and enters into their private lives as part of themselves."

In a nationwide time change such as this, the railroads had no previous experience. The adjustment called for careful planning and preparation and the greatest of care and watchfulness by railroad officials and employees. Specific orders were issued on every division, instructing every officer and every employee as to what should be done in making the change. Train crews on line were instructed in every instance as to what change to make in their watches. Members of each crew were also instructed to check their watches with the telegraph operator upon arrival at the next scheduled stop.

Sunday was selected because there were fewer trains in operation at that time and the change could be made with the minimum of inconvenience and the maximum of safety.

Discussing the annoyance caused by the change, one newspaper editor commented: "The change in time may be annoying to some, but those who are so annoyed should console themselves with the reflection that there is in the Fiji Islands a house which is so divided by the 180th degree of longitude that when it is Sunday in the parlor it is Monday in the kitchen."

Many cities and towns located on the borderline between two time zones found it difficult to decide which time to adopt. Pittsburgh and Buffalo were on the borderline between the Eastern and Central Time zones, and public opinion in those cities was divided as to which time should be used by business establishments, schools, churches, theaters, and citizens generally.

A St. Louis newspaper facetiously remarked that it wouldn't make much difference whether some of the Western cities, like North Platte and Dodge City, used Central Time or Mountain Time "except to a man who was about to be hanged." Said the editor, "He will be

good for another hour of life if he can induce the sheriff to stage the act by Mountain instead of Central Time."

Many legal complications resulted from the changes in time. An interesting case was reported from the State of Iowa. This case involved the question of whether a fire insurance policy which expired at noon of a certain day should be governed by solar or Standard Time. If sun time governed, the policy was in force when the fire broke out; but if Standard Time governed, then the policy ceased to be in force 2½ minutes before the fire started. The Supreme Court held that the presumption was that the parties to the contract intended sun time and decided in favor of the policy holder.

There were some amusing incidents and a few slight hitches in changing from local to Standard Time in various parts of the country. For instance, the mayor of Bangor, Maine, refused to recognize the new time on the ground that it was unconstitutional. He even threatened to have the police prevent the churches from ringing their bells on the new time, but popular feeling ran against him and he did not carry out his threat. However, he continued to display the courage of his convictions, and Standard vs. Sun Time became a first rate political issue in Bangor. The City Council voted for Standard Time; the mayor promptly vetoed the order, declaring that no one had power "to change one of the immutable laws of God."

While many pastors endorsed Standard Time, one Boston preacher opposed it on the ground that "it is a lie."

But the American people soon came to accept Standard Time without question, and it has since spread to other lands until today it is in almost universal use.

It is an interesting fact that the method of reckoning time instituted by the railroads in 1883, although adopted and used by the Federal Government and the states, cities and towns throughout the country, was put into effect without Federal legislation of any sort.

AS VIEWED BY BUSINESS

By Frank D. Hendrickson
President of the American Hard Rubber Company

READING The World Calendar publications, I was particularly interested in the article "Months Blotted Out—?" Third Quarter 1950 *Journal of Calendar Reform*, page 139.

Our company is operated on a combination of the present Gregorian calendar and a pay-week schedule of thirteen periods of four weeks each, plus an extra day or days to balance off the calendar year. The important unit of time with us is the week. Each week contains one pay day, and the weekly period is used for expense control and for comparison of plant operating results.

It is obvious that our pay-week schedule could be coordinated more easily with The World Calendar than with the present Gregorian system—mainly because the equal quarters would all end on Saturday. There would be definite advantages in the elimination of variable vacation shut-downs and in reducing the number of weeks split by holidays.

There would be substantial savings and conveniences to us in this new calendar, especially through the fact that at the end of each quarter our weekly figures would coincide with the end of a month. Just what such savings would amount to I cannot venture to guess.

BIG PROFIT IN CALENDAR REVISION

By Joseph M. Naab
Vice President and Treasurer of Leslie Co. of Lyndhurst, N. J.; President of the Paterson Chapter of the National Association of Cost Accountants

IT IS estimated that calendar reform will enable American business to effect savings annually sufficient to pay the interest on the national debt. Here is a change so profitable and beneficial to all classes of our population that further postponement of it seems ridiculous.

Our present wandering calendar hampers the work of bankers, farmers, educators, scientists, housewives, shopkeepers and business men in general. Government records, budgets and fiscal years are different and confused as between year and year, as between one period and another. Interest and loans in the banking and financial world present their own problems with regard to changing dates. Monthly rentals vary in actual per diem amount as the number of days in the month varies.

In industry, the statistical calculations, income and expenses, production and profit results, wage earners' income and living costs, are in continual difficulty or unbalance due to variations from 24 to 27 working days per month. Transportation companies must annually spend millions of dollars on new schedules because the days of the week are different next year from this. Small stores would save thousands and large stores millions in merchandising by the adoption of The World Calendar.

When holidays fall on Tuesdays, Wednesdays or Thursdays, there is interruption of both production and distribution. Advertising is now on a daily, yes hourly, basis, and with the newspaper and television as media it takes sharp consideration of which day and time should be used to produce reader and listener interest that results in sales. Losses ensue from ill-timed promotions, because of calendar variation, that prove disastrous to a planned budget. These are but a few considerations pointing to the desirability of immediate calendar change.

Some of the inconsistencies now prevailing are inexcusable. At present no two succeeding years are alike; there are 14 variations of calendar years, 28 different kinds of months. Dates and holidays never agree from year to year. Important holidays often hit on Friday, which kills Saturday for retailers, or they fall on Tuesday, which makes Monday an off-day. Each month starts on a different day each year. Each quarter starts on a different day of the week, no two are alike, each has a different number of business days.

And while we set up the new calendar, let us go one step further and provide for a series of long week-ends each year, evenly distributed in each quarter—as proposed by Don Wharton in *Reader's Digest* for October 1950. By shifting some holidays to

Monday and merging others, we could enjoy the benefits of several long week-ends.

Of course, the Wharton program of holiday rearrangement applies only to the United States. Other nations, however, can make similar adjustments of their own holidays. And as time marches on, it may be hoped that an informal international agreement might emerge, whereby the same dates would be used throughout the world—whatever the nature of the holiday observance might be in each area.

Mr. Wharton's suggestions, as applied to the new World Calendar, are indicated below—with the observation that they need not all be applied simultaneously with adoption of the new calendar; they merely show the general effect which might eventually come to our program of holidays as soon as we have achieved a perpetual and unvarying basic system of time measurement. (During the 365 days of our present calendar year, there are 289 shifting holidays on which business cannot be done in one or more nations. This is indeed "confusion compounded," and results in serious delays and difficulties to any business that has to be conducted internationally.)

1. Under The World Calendar, *New Year's Day* will always occur on Sunday, 1 January, preceded by the annual international holiday, Worldsday.
2. *Presidents' Day*—make the first Monday of February a holiday, thereby creating a genuine long week-end in mid-winter and ending the confusion of Washington's Birthday being observed all over the nation, Lincoln's in some states but not all, Jefferson's in four, Roosevelt's in two and Jackson's in one.
3. *States' Day*—the first Monday in March might be a holiday to commemorate the historic anniversaries now scattered all over the calendar on at least 28 different days.*
4. *Easter* and Good Friday—fix the Easter observance, as suggested by international church bodies, on 8 April.
5. *Memorial Day*—observe on last Monday in May.
6. *Independence Day* could be celebrated on the first Monday in July.
7. *Victory Day*—the first Monday in August might be a day for commemorating V-J, V-E and Armistice Days, if necessary or desirable to have such an observance (August generally being a vacation time, this holiday might well be dropped entirely).
8. *Labor Day*—first Monday in September, as now.
9. *Columbus Day*—first Monday in October.
10. *Election Day*—change to first Monday in November.
11. *Thanksgiving Day*—change to fourth Monday preceding Christmas, 27 November of The World Calendar.
12. *Christmas*—comes on Monday, 25 December, in The World Calendar.

The manifold blessings of such a beneficent reform are so obvious that the plan merits universal approval. We'll have more fun—and do better work—when we end the costly nuisance of a haphazard calendar. The change would be a boon to accountants and business management.

At best, calendar reform requires several years between approval and effective

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* A highly practical suggestion for the February-March holidays comes from a member of The World Calendar Association: "Observe Presidents' Day on the 11-13 February week-end. This brings the Washington observance on his actual (Old Style) birthday, 11 February, and connects it closely with Lincoln's birthday, the 12th. The long holiday would come midway between New Year's and Easter. As for the 28 different States' Days, let's eliminate them entirely, except as school exercises or local observances. By replacing them with a long Presidents' Day week-end we will emphasize that the country is a united nation." . . . In leap years, of course, The World Calendar provides an extra international holiday in midsummer—the Leapyear Day which is set apart between Saturday, 30 June, and Sunday, 1 July.

date of such changes—for technical operations such as calendar and almanac printing, and preparation of nautical tables for shipping and the various naval, air and military services, compiled several years in advance. In order that the changeover can be made with a minimum of confusion, it must be done in a year when the present Gregorian calendar and The World Calendar coincide. Next such date is Sunday, 1 January 1956.

If we want the new calendar in 1956, it must be approved by the United Nations either at its September 1951 meeting or at an early 1952 session, allowing one year for ratification and legislation by individual nations, and offering the necessary three preparatory years—1953,1954 and 1955—for instituting and implementing the reform.

If you agree with these proposals, you can help to bring them about by doing any or all of the following: (1) Write your support of The World Calendar to the appropriate authorities in Washington; (2) petition the United Nations directly to adopt The World Calendar in 1951 to become effective in 1956; (3) ask your Governor to back a study of the plan for the next Governor's Conference; (4) get your friends, business associates, civic clubs, local labor organizations and trade associations to discuss the plan and act on the first three suggestions above.

Foremost advocate of calendar reform in Washington is Senator Estes Kefauver of Tennessee, who in 1949 introduced the Kefauver Bill to give United States approval for the earliest possible international adoption of The World Calendar. The bill unfortunately never got out of committee, owing to pressure of other business (much of it far less important, I'm sure, than the Kefauver Bill). Perhaps today the Senator would have better luck with his colleagues on the committee, thanks to the prestige and fame he has won in recent months.

President Harry S. Truman, when he was a United States Senator, endorsed The World Calendar, but he has not done much about it since he moved from Capitol Hill to the White House. Back in 1935 he wrote: "All of us are interested in the revision of the calendar as something to talk about as an academic matter, and personally I would like to see it go into effect." Perhaps the time has come when he should have a few letters from calendar reform fans, urging that he make a move toward getting this excellent improvement under way.

There is no real difficulty in the path of The World Calendar except inertia. Here is a cause which the United Nations ought to take up with a bang, completely confident that nothing but good can come out of it.

An international agreement for a new calendar would be an accomplishment of real importance to the United Nations. Here at least, in these troubled times, is a safe and equable subject on which all nations can unite. United action for a new calendar would prove even to the doubters that nations can agree and cooperate. And who knows but that the nations themselves, when they find they can agree on this, may not see the feasibility and wisdom of agreeing on other matters and measures, too?

One calendar for all peoples, a simplified calendar that could be hung on the wall, remembered rather than consulted, will mean a long step toward the goal of international understanding and good will.

AUTHOR MEETS CRITIC

By Essy Key-Rasmussen
Former Member of the Communications and Transit Section of the League of Nations, in Charge of Calendar Reform

Back in 1943, considerable confusion followed the introduction in Congress of a resolution for endorsement of the "Edwards Perpetual Calendar," developed by a Navy lieutenant, Willard E. Edwards of Burbank, California. His plan was explained in a pamphlet published in Honolulu in 1943. It was discussed at considerable length in the Journal of Calendar Reform, which also published an article on Lieutenant Edwards' proposals by Mrs. Key-Rasmussen, now a resident of Washington, D. C. She is one of the leading international experts on calendar reform, and a woman of great personal charm, tact and wisdom. She returns to the subject of her 1944 article with a clarification "for the record."

SIX years after the publication of my article in the *Journal of Calendar Reform*, I received a long letter dated 11 December 1950, from Willard E. Edwards of Honolulu. His letter said in part:

"Your article states: 'I wish to call the attention of readers of the Journal and The World Calendar Association itself to the *fact* (so you say) that the Edwards Perpetual Calendar is *a direct replica* of Professor L. A. Grosclaude's plan which was published in Switzerland, March 1900.' (The italics are mine.) And the heading of this apparently deliberately false bit of dirty journalism includes the words 'duplicate of.' . . .

"I hardly need point out that after I took the trouble to investigate your article, I found the exact calendar which Miss Achelis has been publicizing all these years—and without any credit to the man who introduced it to the League, namely Mr. Octavius Smith's plan (File 45266 on page 32 of the League's publication C.167.M.49.1927.VIII). Could the pot be calling the kettle black? I had never heard of Professor Grosclaude before, but found his plan on page 29 of the above publication, File 34973, after reading your article.

"He begins the year on January 1st; I on 'New Year's Day,' the day *preceding* January 1st. His annual day apart is the last day of the year; mine is the first day of the year. His leap-year day is the 183d day of the year; mine is the 184th. He suggests Easter on April 7th; I on April 14th.

"And doesn't he start his weeks with Sunday! I start mine with Monday. Do you think you owe an apology or not?"

I regret that, being struck with the similarity of the two plans, I inadvertently overlooked minor differences. Instead of my phrase "direct replica," I should have used the words "similar to," and the title of my article should have been modified accordingly. On the next page are printed the two plans under discussion.

It will be apparent from a glance at the two proposals that they are similar, inasmuch as in both plans, each quarter is composed of months with 30, 30, 31 days, the week begins with Monday (Mr. Edwards' statement to the contrary notwithstanding), one annual day is set apart between 31 December and 1 January, and the other day apart, Leap-year Day, is inserted between 31 June and 1 July in both plans. It

is either the 183d or 184th day of the year, depending on whether the annual set-apart day ends or starts the year.

EDWARDS PLAN

Proposer's Name: Willard E. Edwards
Date of Proposal: Newspaper Clippings 1941

Summary of Basis

1. 12 months of 30, 30, 31 days.
2-3. Year to begin with "New Year's Day," the annual blank day, which is followed by Monday, 1 January.
4. Leap-day to be inserted between 31 June and 1 July, as the first day of the second half-year.
5. Easter to be 14 April, fixed.

GROSCLAUDE PLAN

Proposer's Name: L. A. Grosclaude
Date of Proposal: March 1900
League of Nations File No. 34973.

Summary of Basis

1. 12 months of 30, 30, 31 days.
2. Year to begin on Monday, 1 January.
3. The annual blank day to be inserted between 31 December and 1 January.
4. Leap-day to be inserted between 31 June and 1 July.
5. Easter to be on 7 April, fixed.

The fixed date for Easter, 7 April in the Grosclaude plan and 14 April in the Edwards calendar, is a matter that should be left entirely to the decision of the religious authorities, in the opinion of The World Calendar Association, with which I wholly concur. Because of this stand I did not consider the Easter question, having concentrated my article on the structural differences between the groups of calendar plans eliminated by the League of Nations. I believe it is correct to say that both plans under discussion belong to one of those groups, namely, the proposals in which each quarter is composed of months with 30, 30, 31 days, where 1 January falls on a Monday and the weeks begin with a Monday.

As for Mr. Edwards' remarks about The World Calendar and Mr. Smith's plan, it should be pointed out that The World Calendar Association has never claimed to have originated The World Calendar. In the words of Miss Achelis: "The World Calendar gradually evolved from Switzerland as a result of a study made at the request of the International Congress of Chambers of Commerce in 1914 and later through the activities of the League of Nations. Many minds have contributed, valuable historical facts have been unearthed, greater knowledge and understanding have been gained, and yet no one can claim it—The World Calendar." The Octavius Smith plan, submitted to the League in 1925, seems to me to be covered by that statement.

SMITH PLAN

Proposer's Name: Octavius Smith
Date of Proposal: 18 May 1925
League of Nations File No. 45266.

Summary of Basis

1. 12 months of 31, 30, 30 days.
2. The year to begin on Sunday, 1 January.
3. The annual blank day to be on 31 December (New Year's Eve).
4. Leap-day to be on 31 June (Peace Day).
5. Easter to be on 8 April, fixed.

I take this opportunity to reiterate the opinion which motivated the writing of my article, back in 1944, namely, that the chances of achieving the adoption of a perpetual calendar will increase considerably if all those in favor, instead of splitting their votes, will rally around one plan, The World Calendar, which has already gained such wide support both at home and abroad.

NEW IMPETUS IN WORLD MOVEMENT

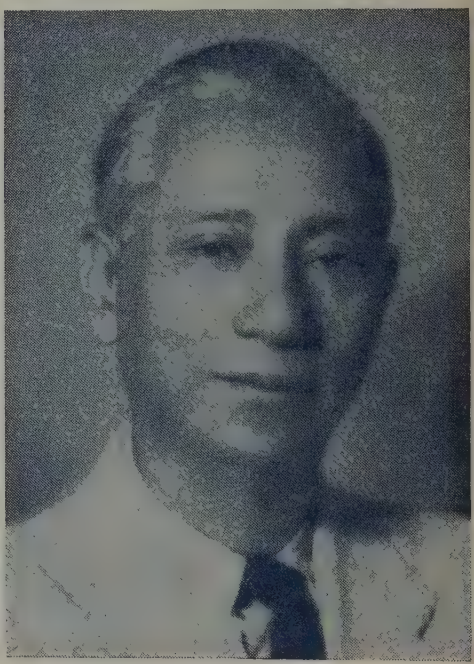
By Harriet A. Lillie
Secretary, The World Calendar Association, International

ORGANIZATION of a new calendar reform committee in Spain, and active promotion of The World Calendar in 27 other countries, was reported at the fourth annual meeting of The World Calendar Association, International, held in New York City on 15 January.

Countries represented at the meeting were: Argentina, Australia, Belgium, Brazil, Canada, Cuba, Dominican Republic, France, Greece, Japan, Mexico, Netherlands, New Zealand, Norway, Panama, Peru, Philippines, Spain, Switzerland, United States and Uruguay.

The new affiliated committee in Spain came into being as a result of the enthusiasm of Ramon Caro, Chairman of the Philippine committee, who interested a prominent Spanish industrialist in the subject while the latter was on a business visit to the Philippine Islands. The Spanish visitor, Ramon Ximenez Gil de Avalle, set to work immediately to organize an active Spanish interest in revision of the calendar. Mr. Ximenez is now Chairman of the Spanish Affiliate of The World Calendar Association, International, with the Reverend Father Antonio Romaña, S. J., as Honorary President. Another active Spaniard is the Reverend Father Anastasio Toribios, of the powerful Benedictine Order, who has already written an article on The World Calendar for the influential religious review *Liturgia.*

The Spanish committee was warmly welcomed into the international organization, and participated in the meeting through an authorized proxy. Other Spanish-speaking countries which reported progress and keener interest were Cuba, Panama, Peru and the Philippines.



Philippine Chairman Ramon Caro is a distinguished automotive engineer and electrical expert. He is President of Ramcar, Incorporated, which manufactures storage batteries and other electrical equipment. His offices are at 116 Padre Faura, Manila.

In Cuba, Masonic lodges have undertaken the promotion of calendar reform

as part of their program of social betterment and human progress. A lecture on the subject, by Tomas Justiz y del Valle, former President of the Cuban Academy of History, has been published in pamphlet form and is being widely distributed among Masonic officials and their friends.

Activity in Panama centers around the energetic Chairman, Dr. Juan Rivera Reyes, who proposed a calendar reform resolution at the September Assembly of the World Federation of United Nations Associations, in Geneva. Dr. Rivera Reyes has been a standard bearer of calendar revision for more than a decade.

He has stood four-square on his original platform, that "the reform of the present calendar is of the greatest importance to the whole of humanity . . . this is not an abstract and speculative matter, but a real and practical one of great immediate importance to the life of the people . . . and the sooner it is done the better it will be for the well-being of everybody."

From the Philippines came an encouraging account of intensive activity in contacting influential groups and individuals. A questionnaire elicited 90 per cent responses, and letters to members of the Philippine Congress showed a generally favorable opinion.

In Brazil, an active committee has been working closely with the Foreign Office, "where everything is concentrated for action at the proper time."

One of the most interesting reports came from Japan, where a calendar reform committee has been organized in the Japanese Congress, and where the schools have undertaken promotion of the new calendar on an elaborate scale, with a special textbook on the subject.

Reports were also submitted by Australia, Norway and Switzerland. The Norwegian government almanac has given considerable space to a review of the proposed revision by the Chairman of The World Calendar Affiliate. Australia is preparing an extensive survey of opinion from all parts of the Commonwealth. Switzerland is still keeping up the position which it pioneered over 20 years ago.

The longest and most detailed reports came from the United States, Canada and France. Canada's enthusiastic Chairman, A. J. Hills, has been indefatigable in securing endorsements from leading labor organizations, business groups and the press. The three labor groups which have approved calendar reform include over 83 per cent of union membership in the Dominion. Particularly significant is the endorsement of the Canadian and Catholic Confederation of Labor, because its action implies approval on the part of the Roman Catholic Church in Quebec. Mr. Hills' report closed with a paragraph of promise for the future:

> It is your Chairman's firm conviction that Canada has much to gain and nothing to lose in endeavoring to secure for mankind such outstanding benefits as a fixed, balanced and regular 12-month equal-quarter calendar will bring. It is his hope and objective that the widespread expressions of favor, reaching the Canadian Government, will induce Canada to take a position of leadership among the nations, as it did in the case of Standard Time.

In France, the able and scholarly M. Paul-Louis Hervier reported a satisfactory year's work, with governmental recognition of calendar reform suddenly taking a long forward step through the active interest of AFNOR, the Association Française de Normalisation. AFNOR appointed a standing committee on calendar

reform, and this body has already held three hearings, with 50 committee members participating. From these sessions will come a comprehensive official report,



In the important series of Paris meetings on calendar reform, the official in charge was M. Pallez, Secretary-General of AFNOR (Association Française de Normalisation).

outlining recommendations for the adoption of The World Calendar. It may be expected that this report will be influential in persuading the International Standards Office to take up a position of leadership in the movement.

In the United States, the year has been marked by a steady continuation of pamphlets, lectures and contacts. Promotion of calendar reform has been pushed aggressively in press, radio and television. Mr. Edward F. Flynn of the American Advisory Committee, has lectured at frequent intervals to audiences in many parts of the country. Material for debates and exhibits has been supplied to educational institutions and interested groups. The World Calendar Exhibit, on view for the past ten years at the New York Museum of Science and Industry, has been transferred to the Schenectady, New York, Museum. A presentation of calendar reform was made at the International Trade Fair in Chicago.

Research progress included the completion of the Firestone Survey, which summarized replies to a questionnaire mailed to 3,300 members of the Controllers Institute of America. More than 20 billions of dollars in capitalization was represented in the companies which replied to this questionnaire through their treasurers and controllers; and of this amount about 18½ billions favored calendar revision. Approximately 98 per cent of the respondents who favored a stabilized calendar specified The World Calendar as their preference.

Officers of The World Calendar Association, International, were re-elected as follows: President, Elisabeth Achelis; Vice-President, Charles S. McVeigh; Secretary-Treasurer, Harriet A. Lillie.

The President, in a closing address, expressed satisfaction at the splendid progress made during the past year and emphasized the need of continuing a unified effort in which all nations should take part. "This is a task," she said, "in which everybody should have a share. It requires the cooperation of all, and should not rest on any one nation. The proposed Five-Year Plan, looking to adoption in 1956, is well on the way to a successful fruition. The time for action is immediate, the time for operation is several years hence. May God prosper our undertaking."

HERE'S A CHALLENGE TO ALL

By Al Altwegg
Publisher of the Arlington (Texas) Journal

AN opportunity has just gone by unused. The first of this year 1951 would have been an ideal time for the world to have adopted a new calendar. But the world was busy, too busy. It was too busy with the serious business of either going to war or trying to avoid war—it wasn't quite clear just which. So the chance of doing something constructive like adopting a new calendar was shoved to one side.

The time would have been ideal for adopting a new calendar for two reasons. For one, the old calendar and the new one came close to coinciding, so that it would have meant very little wrench to slip out of the old and into the new.

For the second reason, this year was the beginning of another half-century. It would have made the time of the change memorable, easy to recall in future times when it would be necessary to recollect just when it was the world functioned under the old calendar. But the opportunity was passed by. It was passed up because of the world political situation.

The forces advocating the new and more orderly calendar were all set to push for its adoption when the United Nations General Assembly met last September, but then the Korean war situation so occupied the delegates to the Assembly that the proponents of the new calendar—which has been named The World Calendar—decided that the time was not right for them to push their efforts.

They continue to work toward their goal, but they do so more slowly, hoping to convince the world of the logic of their idea and gradually win enough acceptance of it, so that some day it will be adopted.

The World Calendar is really a logical proposal. It is probably about the best suggestion that can be made for ordering the world's year of 365 days and some odd hours and minutes and seconds. It retains the present scheme of 12 months, which is much better than another suggested calendar which would divide the year into 13 months. And it has further advantages:

Each quarter would begin on a Sunday and end on a Saturday. Each year would begin on Sunday, 1 January. Each working year would begin on a Monday, 2 January.

The year would be orderly. The months would have 31-30-30-31-30-30-31-30-30-

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Editor's Note: Born in Wisconsin in 1915, the author lived abroad during his boyhood and received his elementary education in France, Switzerland and Germany, returning to the United States for his college training at the University of Pennsylvania. He graduated into journalism, then spent three years in the Pacific with the armed forces, and finally settled down as a newspaper owner and editor in Arlington, Texas, an important market center halfway between Dallas and Fort Worth. *The Arlington Journal* has a fifty-year history of public service and enterprise. Mr. Altwegg's editorials have attracted widespread readership for their freshness, vitality and scope.

31-30-30 days in that order. And the odd day at the end of the year, the 365th, would be a world holiday following 30 December, just to round out celestial requirements.

Gone would be the short month that February is. Gone would be the old business of having to recite "Thirty days hath September" in order to figure out whether October has 30 or 31 days.

And why, you might ask, even think of changing the calendar?

There are many reasons. Business men, business statisticians, can cite an unending string of complaints against the old calendar of unequal periods, that make comparisons not only odious, as the old saying has it, but just plain meaningless. Holidays fall at various times in different years, sometimes in mid-week, breaking up the working periods, and sometimes at week-ends, making it necessary to take other days off. In fact, it has been calculated that this nation will lose more than 450 million dollars in 1952, just because of the antiquated calendar we use.

The merits of the proposed calendar are many. And they are obvious to most people who look into them. The proposed calendar has been backed by chambers of commerce all over the nation, by scientific organizations, by labor groups, by churchmen of all faiths, by athletes and writers, by nurses and dry cleaners.

There is opposition, it is true and of course. There is opposition to every change and every improvement that is ever proposed. What active opposition there is to The World Calendar is mostly opposition of an unreasoning sort, based either on a blind dislike for change or on an ignorance of the logical details of the change that is sought.

But there is still another form of opposition that is worse. It is the opposition of lethargy, of disinterest, of the inability of the great general public to arouse itself even in its own interests. It is that attitude—which is not really opposition, but which has the effect of opposition and is even more deadly than active opposition and harder to combat—that creates the greatest problem for the men and women who are working to give the world a new and more sensible calendar.

The big question becomes, then, one of whether the people of the world can do something constructive for themselves.

Calendar reforms in the past have come about because men with great, virtually universal, influence have seen the need for them and handed them to the mass of the people. But we, who profess to believe in the democratic way of society, believe that progress can be achieved by the people acting democratically. We believe that imposition from above is not necessary, that the people can do things for themselves. Well, if they can—and I do believe that they can—here is a chance for them to prove it.

There is no reason why the calendar should not be improved. Certainly the fact that we have used the old calendar for a number of hundred years is not a sufficient reason. As a matter of fact, about the only good reason for not changing to the new calendar right away is because the convenient time to make the change has just slipped past. But a new target date for the change has already been set. The next convenient time will be 1 January 1956. The question now is, will the world be able to get around to doing something as logical as adopting The World Calendar by 1956? Here, indeed, is a challenge to all of us.

STATISTICAL ADJUSTMENTS FOR CALENDAR IRREGULARITIES

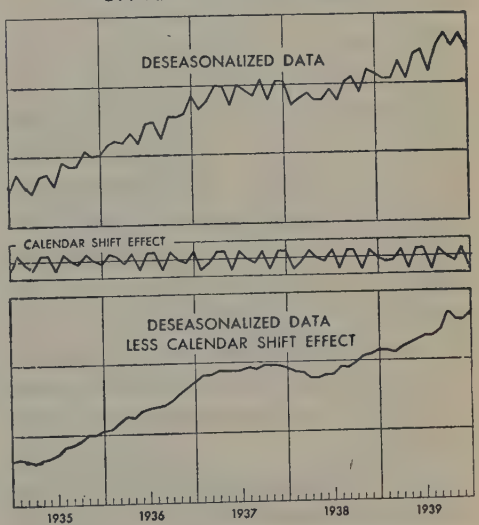
By Charles E. Armstrong
American Telephone and Telegraph Company

As an example of the complex difficulties which arise from the unnecessary irregularities of our present calendar, this article is revealing and convincing, even to the average reader who is not completely at home in the realms of complicated procedures. The practical procedures outlined in the article are the result of many years of study and were recently published in The American Statistician, organ of the American Statistical Association (Oct.-Dec. 1950), as a completely developed method for measuring and eliminating the effects of calendar shifts from series of monthly data.

FOR use in studying past performance and current trends, and particularly in making short-term forecasts, the smoothing of time series is an important step. To the extent possible, it is desirable to remove month-to-month fluctuations in such a way that they may be predicted and superimposed on the projection of the smoothed data. Usually, seasonal variation is the largest element which may be handled in this manner. In some series, however, the effects of shifts in our calendar from one year to another are appreciable and may be susceptible to measurement and prediction.

In series of monthly data in which the contributions of Saturdays and Sundays to the monthly totals are different from those of weekdays, variations in the number of Saturdays or Sundays in a month produce corresponding fluctuations in the monthly data. Since our calendar shifts two days in leap years and one day in all other years, the number of Saturdays and Sundays in any given month usually changes from one year to the next. For example, January had 4 Saturdays and 4

THE EFFECTS OF CALENDAR SHIFT ON AN ECONOMIC SERIES



Sundays in 1947, 5 Saturdays and 4 Sundays in 1948, 5 Saturdays and 5 Sundays in 1949, and 4 Saturdays and 5 Sundays in 1950. The study of the effects of such calendar shifts, although allied to the study of seasonal variation, is a separate field requiring special techniques.

In cases in which the relative values of Saturdays and Sundays depart radically from those of weekdays, calendar shift effects can become quite troublesome. Consider the extreme example in which neither Saturdays nor Sundays make any contribution to the monthly totals, i.e., they each have zero equivalent value as compared with weekdays. Under such conditions, a 30-day month with 5 Saturdays and 5 Sundays would contain 20 equivalent weekdays, and one with 4 Saturdays and 4 Sundays would include 22 equivalent days, or an increase of 10%. This is, of course, an extreme case, but it points up the importance this factor can assume. And, in practice, it is not uncommon to find series in which the calendar shift effects may produce fluctuations of 5% to 8%. This is particularly true in series composed largely of weekly payrolls. (Series composed largely of weekly payrolls, in industries or sections operating on a 5-day week will have Saturday and Sunday values near zero. Series, such as retail sales in agricultural areas, may show Saturday values higher than a weekday.)

In such simple cases as the illustration just cited, the usual solution to the problem is to put the series on a per-weekday basis. The number of weekdays in each month may be determined from a perpetual calendar, and the monthly data divided by this series. A similar approach may also be used when either Saturday or Sunday has zero value, and the other off the two a full weekday value. When, however, either or both of the week-end-days have fractional values, the process becomes somewhat more complex. In such cases, the week-end-days may be added, at their equivalent values, to the number of weekdays in the month, resulting in an equivalent number of weekdays in each month. For example, if Saturday is equal to 0.7 of a weekday, and Sunday equals 0.3, a 4-Saturday, 5-Sunday January would contain $4 \times 0.7 + 5 \times 0.3 + 22 = 26.3$ equivalent weekdays. Dividing the January total by this figure would put the data on an equivalent day basis, and repeating the procedure for all months covered would eliminate the effects of calendar shift. If it is desired to put the series back on a monthly basis, this can be done by multiplying the equivalent day series by the average number of equivalent days in each of the twelve months. This would result in the data being stated in monthly terms, but assuming each month contained an average number of Saturdays and Sundays.

A calendar month may have 4 Saturdays and 4 Sundays, 5 Saturdays and 4 Sundays, 4 Saturdays and 5 Sundays or 5 Saturdays and 5 Sundays. We may identify all 4-Saturday, 4-Sunday months as a-months, all 5-Saturday, 4-Sunday months as b-months, all 4-Saturday, 5-Sunday months as c-months, and all 5-Saturday, 5-Sunday months as d-months. There are, of course, 28-, 29-, 30-, and 31-day months, but each of these always occurs in the same calendar month every year, and most of the fluctuations arising out of overall length of month variations

ill be removed by the application of sea-
nal variation adjustments.

The process of computing the number
equivalent days in each month, put-
ng the original series on a per-equiva-
nt-day basis, and then reconverting to a
onthly basis is a laborious job. This
ain of computations can be condensed
to a single operation, the application of
n index similar to an index of seasonal
ariation, which reflects the amount by
hich the month in question differs from
n average month by reason of the non-
verage number of Saturdays and Sun-
ays it contains.

This index may be derived from the
llowing formulae:

Index for an a-month

$$= 100 \frac{4\,\text{Sa} + 4\,\text{Su} + 22.66}{4.38\,\text{Sa} + 4.38\,\text{Su} + 21.90}$$

Index for a b-month

$$= 100 \frac{5\,\text{Sa} + 4\,\text{Su} + 21.66}{4.38\,\text{Sa} + 4.38\,\text{Su} + 21.90}$$

Index for a c-month

$$= 100 \frac{4\,\text{Sa} + 5\,\text{Su} + 21.66}{4.38\,\text{Sa} + 4.38\,\text{Su} + 21.90}$$

Index for a d-month

$$= 100 \frac{5\,\text{Sa} + 5\,\text{Su} + 20.66}{4.38\,\text{Sa} + 4.38\,\text{Su} + 21.90}$$

In these formulae Sa represents the pro-
ortionate part of a weekday represented
y a Saturday, and Su the proportionate
art represented by a Sunday. They give
-, b-, c- and d-indexes of calendar shift
hich apply to all months except Febru-
ry. Since February has 28 days in some
ears, and 29 in other years, special steps
re necessary to recognize this peculiarity.
ll non-leap-year *basic* indexes of calen-
ar shift are 99.12. After the a-, b-, c- and d-indexes for the non-February months have been computed by means of the above formulae, the leap-year basic February indexes may be derived as indicated in Step X of the procedure given on a later page of this article.

Dividing the data by the above-derived indexes places the original monthly data on an equated monthly basis, which assumes all 31-day months contain 31/7 = 4.43 equivalent weeks, and all 30-day months contain 30/7 = 4.29 equivalent weeks. The adjustment for the overall length of the month is left to the seasonal variation process, which also includes allowances for holidays and other seasonal influences. In the case of February, the application of the calendar shift index puts February on an average 28.25-day basis. Thus, in all cases the index is designed to adjust for fluctuations resulting from the shifts in our calendar from one year to the next, and makes no attempt to intrude on the area of seasonal variation.

For any given set of values of Saturdays and Sundays there are only 7 possible calendar shift indexes. In order further to systematize the process and reduce clerical labor, Table I has been prepared, which shows, for various combinations of whole and fractional values of Saturdays and Sundays, the calendar shift indexes computed from these formulae. For fractional values not shown, simple interpolation should in most cases prove satisfactory, or the indexes may be worked out using the formulae.

If the equivalent values of Saturdays and Sundays are known, the following table and above formulae may be used. When, however, these values are not known in advance, they may be estimated from the behavior of the seasonally ad-

TABLE I

CALENDAR SHIFT INDEXES FOR VARIOUS RELATIVE VALUES OF SATURDAY & SUNDAY

Percent of Weekday		Indexes for all Non-February Months				Basic Indexes for Leap-Year Februarys*		
		READ DOWN						
Saturday	Sunday	a	b	c	d	a	b	c
100	100	100.00	100.00	100.00	100.00	102.65+	102.65+	102.65+
100	80	100.25+	100.25+	99.58	99.58	102.75	102.75	102.02
100	60	100.53	100.53	99.14	99.14	102.87	102.87	101.36
100	50	100.67	100.67	98.91	98.91	102.92	102.92	101.01
100	40	100.81	100.81	98.67	98.67	102.98	102.98	100.66
100	20	101.12	101.12	98.17	98.17	103.11	103.11	99.91
100	0	101.45—	101.45—	97.64	97.64	103.24	103.24	99.12
80	80	100.53	99.83	99.83	99.14	102.87	102.11	102.11
80	60	100.81	100.10	99.39	98.67	102.98	102.21	101.44
80	50	100.96	100.24	99.15+	98.43	103.04	102.26	101.08
80	40	101.12	100.38	98.91	98.17	103.11	102.31	100.71
80	20	101.45—	100.68	98.40	97.64	103.24	102.40	99.93
80	0	101.79	101.01	97.86	97.07	103.38	102.53	99.12
60	60	101.12	99.65—	99.65—	98.17	103.11	101.52	101.52
60	50	101.28	99.78	99.41	97.91	103.17	101.54	101.14
60	40	101.45—	99.92	99.16	97.64	103.24	101.58	100.76
60	20	101.79	100.22	98.65—	97.07	103.38	101.68	99.97
60	0	102.17	100.54	98.09	96.46	103.54	101.77	99.12
50	50	101.45—	99.54	99.54	97.64	103.24	101.17	101.17
50	40	101.62	99.68	99.30	97.36	103.31	101.21	100.79
50	20	101.98	99.98	98.77	96.77	103.46	101.29	99.98
50	0	102.37	100.29	98.22	96.14	103.62	101.36	99.12
40	40	101.79	99.43	99.43	97.07	103.38	100.82	100.82
40	20	102.17	99.72	98.91	96.46	103.54	100.88	100.00
40	0	102.57	100.03	98.34	95.81	103.70	100.94	99.12
20	20	102.57	99.19	99.19	95.81—	103.70	100.03	100.03
20	0	103.00	99.49	98.61	95.10	103.87	100.06	99.12
0	0	103.47	98.90	98.90	94.34	104.07	99.12	99.12
Sunday	Saturday	a	c	b	d	a	c	b
		READ UP						

* All non-leap-year February indexes are 99.12. The arrangement of the table follows that used in trigonometric tables, and by avoiding duplicate listings, shortens the table considerably.

justed data and calendar shift indexes computed directly, by the following procedure:

I. Label the months in the series as a, b, c or d months, in accordance with the system earlier discussed.

II. Compute link relatives of the seasonally adjusted data. (A link relative is the percentage obtained by dividing the datum for a given month by the datum for the preceding month.) Disregard February, the March relative being computed by dividing the March datum by the January datum. (For refined measurement of seasonal variation, it may be desirable in some cases to recompute seasonal indexes from the original data after adjustment for calendar shift.)

III. Step II will result in 5 types of link relatives, a/d, d/a, b/a, c/b and a/c. Make a separate list of these five types of link relatives. (Disregard a/a relatives which frequently occur and a/b, b/c and c/a relatives which may occur in leap years.)

IV. Compute a broadened median (by averaging the items remaining after eliminating the noticeably high and low values in equal numbers), or other suitable measure of central tendency for each of the five types of link relatives. In this step, a time series chart may prove helpful in setting representative central values. (If such a chart shows changing calendar characteristics, the over-all period may be broken into

several portions and a spearate calendar analysis —Steps IV-X—made for each portion. However, calendar indexes computed from less than four or five years' data may not be too reliable.)

V. Divide the a/d and d/a broadened median values, determined in IV, by the square root of their product and multiply by 100. Likewise, divide the b/a, c/b and a/c values by the cube root of their product and multiply by 100. This procedure adjusts for any trend effect or bias in the ratios.

VI. Using the adjusted values in V, compute d/c value as (a/c × d/a) ÷ 100.

VII. Theoretically, b/a and d/c should be approximately equal, since both ratios reflect the excess or deficit of the value of a Saturday over that of a weekday. If they are not equal (and in practice they seldom will be), substitute the average of the two for each of them.

VIII. Using the adjusted values of a/d and c/b determined in V, and the b/a and d/c averaged value determined in VII, apply the following version of the link-relative process:

(1) (Links)	a/d	b/a	c/b	d/c	(Here b/a = d/c)
(2) (Chains)*	a/d	b/d	c/d	d/d = 100	(Check)
(3) (Weights)**	.48	.14	.14	.24	Weighted Average of (2)
(4) (Indexes)	a	b	c	d	(2) ÷ Weighted Average × 100

IX. These indexes apply to all months except February, and may be applied directly to the series under study. They reflect relative values of Saturdays and Sundays as compared with weekdays,† which may be computed approximately as follows (these values may be expressed as percentages):

$$\frac{\text{Saturday}}{\text{Weekday}} = 1 - \frac{30.66\ (a-b)}{100+4.38\ (a-d)}$$

$$\frac{\text{Sunday}}{\text{Weekday}} = 1 - \frac{30.66\ (a-c)}{100+4.38\ (a-d)}$$

X. Basic‡ February calendar indexes may be computed as follows:

(1) Non-leap-year Index = 99.1
(2) Leap-year "a" Index = 102.7 + 0.155 (a—d)
(3) Leap-year "b" Index = 102.7 + 0.155 (a—d) — 1.085 (a—b)
(4) Leap-year "c" Index = 102.7 + 0.155 (a—d) — 1.085 (a—c)

XI. The effects of calendar shift in the original series may be removed by dividing by the indexes derived in VIII, Line (4), and in X, and multiplying by 100.

Table II on the next page and the chart shown at the beginning of this article display certain phases of the application of the procedure to a typical economic series. The table shows the computations involved in Steps V to X of the procedure.

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*The first chain value (a/d) is the same as the link value immediately above. Subsequent chain values are computed as (Value to left × value above) ÷ 100.

** These weights reflect the frequency of occurrence of the four types of months. The weighted average is derived by multiplying each of the chained relatives in line (2) by the weight immediately below in line (3), and adding the four products so obtained.

†These values are at best reliable only to the last full percent. They represent the proportionate values of Saturdays and Sundays as compared with weekdays, for those monthly series in which a more or less definite value accrues for each day of the month. An example of this type of series is the payroll associated with weekly-paid employees.

For series of the true monthly type, such as rents or the payroll of monthly-paid employees, Saturdays and Sundays have equal status with weekdays in that they do not affect the monthly values. In such series, there is no calendar shift effect, and the indexes in Step VIII should theoretically all be 100.

N.B.—If, considering the series involved, the Saturday and Sunday values appear unreasonable, it may be the result of erroneous computation, or the presence of freak or inconsistent calendar shift effects. In the latter case, the results of the process will probably not be reliable.

‡Although the calendar indexes determined in Step VIII line (4) apply to all non-February months regardless of type of series, the determination of calendar shift indexes for February is governed by the type of series. For a true monthly series, February calendar indexes, as well as all other calendar indexes, are 100. For a series of the daily type, February indexes may be computed as outlined in Step X.

For data combining characteristics of both types of series, the basic February indexes should be altered by damping their deviations from 100 by a factor representing the proportion the monthly-type elements bear to the total. Information on this proportion may be gained from knowledge of the underlying nature of the series, or from consideration of the variations in the lengths of the months and their effects on the data.

The first four steps are not shown, as they are relatively simple and should present no difficulty in practice. The chart shows the comparison of the data before and after calendar shift adjustment. As can be seen from the chart, the adjustment for calendar shift results in a noticeably smoother curve. In many cases, of course, the smoothing effects of the process will not be as marked as in this example.

TABLE II

COMPUTATION OF CALENDAR SHIFT INDEXES

Step V

Type of Calendar Link Relative	Broadened Median Calendar Links (1)	Product (2)	Root of Product (3)	Adjusted Calendar Links 100 (1) ÷ (3) (4)
a/d	106.0			105.41
d/a	95.4	10,112.40	100.56	94.87
b/a	98.8			97.95
c/b	99.8	1,026,450.984	100.87	98.94
a/c	104.1			103.20

Step VI

$$d/c = \frac{a/c \times d/a}{100} = \frac{94.87 \times 103.20}{100} = 97.90$$

Step VII

$$\frac{d/c + b/a}{2} = \frac{97.90 + 97.95}{2} = 97.92$$

Step VIII

(1)	105.41	97.92	98.94	97.92	
(2)	105.41	103.22	102.13	100.00	
(3)	.48	.14	.14	.24	Wtd. Avg.= 103.35
(4)	102.0	99.9	98.8	96.8	

Step IX

$$\frac{\text{Saturday}}{\text{Weekday}} = 1 - \frac{30.66\ (102.0 - 99.9)}{100 + 4.38\ (102.0 - 96.8)} = 1 - \frac{64.4}{122.8} = 48\%$$

$$\frac{\text{Sunday}}{\text{Weekday}} = 1 - \frac{30.66\ (102.0 - 98.8)}{100 + 4.38\ (102.0 - 96.8)} = 1 - \frac{98.1}{122.8} = 20\%$$

Step X

February Indexes

Non-Leap Year Index = 99.1
Leap-Year "a" Index = 102.7 + 0.155 (5.2) = 103.5
Leap-Year "b" Index = 103.5 — 1.085 (2.1) = 101.2
Leap-Year "c" Index = 103.5 — 1.085 (4.2) = 100.0

FUNDAMENTALS OF WORLD CALENDAR

By Elisabeth Achelis

Reprinted from "Social Science," Official Journal of the National Academy of Economics and Political Science, January 1951.

THE fundamental qualities sought in any revision of the civil calendar should of necessity be order, stability, comparability and balance. These fundamentals are inherent in The World Calendar of 12 months and equal quarters by which the inequalities, irregularities and wanderings of the existing calendar are removed.

To Abbé Mastrofini, a Roman Catholic priest, credit must be given for devising a perpetual calendar in agreement with the 365 days of the year, because it was he who, in 1834, solved the knotty problem by which 52 weeks, each of seven days, were fitted into the 365-day year. He accomplished this feat by considering the year as of 364 days, easily divisible into equal quarters and half-years, and then placing the essential 365th day at the end of the year, outside the week, yet within the calendar year itself. The 366th day every four years in leap years was treated in a similar fashion. By this method the calendar obtained the much-needed stability and remained the same reliable calendar from year to year without forfeiting astronomical accuracy.

Before entering into the description of functions of The World Calendar, however, a brief survey of the long process that it took to develop the calendar is helpful and enlightening.

When we realize that the Earth, according to Dr. Arthur H. Compton, is at least two billion years old, and more recently declared to have been probably spinning through space for three and one-third billion years; when Dr. James H. Breasted informs us that 4236 B.C. is not only the earliest fixed date in history but also the earliest date in the intellectual history of man, when the Egyptians introduced the solar seasonal calendar, the progenitor of our present calendar; and when Lancelot Hogben writes that man's first organized achievement was the construction of the calendar, and that science began when man started to plan ahead for the seasons because planning ahead for the seasons demanded an organized body of continuous observation and a permanent record of their recurrences;—it is readily seen how gradual has been the building and the establishing of the calendar to the present time.

Time is truly a magic and immortal highway, guiding man ever onward, through infinitely slow stages, on his journey to greater advancement. For nothing stands still. To progress, man must be ready and willing to accept new discoveries, to adapt himself to new conditions, likewise his varying tools call for change and improvement.

The recording of time, the calendar, has had a long record of development, with man groping here, searching there, ever imbued with an inflexible desire to find the

true basis and arrangement for the calendar by which his daily life, social needs and innumerable activities (past, present and future) could be recorded more accurately.

The foundation of the calendar rests upon natural events, such as the recurring day and night, the new or full moon, spring and autumn equinoxes, summer and winter solstices. The shaping of the calendar belongs in the field of nature, of science.

Priests, however, were the custodians to whom were entrusted the proper observances of feast days, for worship, for celebration or for fast days. Thus, in ancient days, science and religion were closely allied in the making of the calendar. However, all too often, as we shall see, the priesthood claimed the greater authority and the calendar became a pawn in their hands which retarded its development along natural and scientific lines.

The day, that we take so much for granted, became established as one complete unit of time as late as the fourteenth century, when the clock was so constructed as to strike the hours. Previously, the day of "sun" or light and the night of "sleep" or dark were considered as two separate divisions of time.

To the day, also, different beginnings were given—from sunrise to sunrise, sunset to sunset, or noon to the next noon. In our present age, the day begins on the second after the 24th midnight hour has been reached, because at that moment man's activities are reduced to a minimum and nature appears to fluctuate less noticeably. It was a notable forward step, basing the day on 24 hours for the civil, social, business and religious life of mankind, even though clocks and watches still carry the twelve hours which require the A.M. and P.M. designation.

The week also has been subject to many changes. Primitive man did not know the week as we interpret it. He observed series of market days with apparently no astronomical associations. These series varied as to length of days. Generally in the African Congo four market days were observed with one day of rest. In ancient Mexico and other parts of Central America five-day market weeks with a day of rest were known, whereas the Romans had eight-day market weeks with apparently no day of rest. Early Egyptians divided months into three decades or weeks of ten days.

Ancient Babylonians and Chaldeans, well versed in astronomy, observed series of seven-day weeks, giving to the seven days the names of the then known seven planets, including the Sun and Moon. It was also believed that the four phases of the moon, the duration of each averaging about seven days, gave rise to the week. The Babylonians considered the 7th, 14th, 21st, and 28th days as of ill omen, unsuitable for desirable work so that man feared to work on these days.

The ancient Hebrews observed seven-day weeks with the seventh day, Saturday, as a day of rest. They bestowed upon this day a feeling of sanctity, removing from it all past associations of evil. It was only during the Babylonian captivity that the Hebrew priesthood conceived the idea of the unbroken sequence of the seven-day week in order to establish more securely the Sabbath observance. Previously, the ancient Israelites used pentecontad periods of 50 days.

A pentecontad period contained seven weeks of 49 days that included seven

bbaths with an extra 50th day as a special feast day, observed as the closing day each pentecontad period. Seven such 50-day cycles formed the pentecontad calendar with a festival week of seven days and another festival week of eight days, both outside the week, concluding the solar seasonal year. The early Israelites, like the ancient Canaanites and Egyptians, used a seasonal agricultural calendar wherein the days ran from sunrise to sunrise.

It was only at a much later time, during the Babylonian captivity, that the Sabbath was attached to the unbroken continuity of the seven-day week and the calendar became firmly established on a luni-solar basis with the days running from sunset to sunset. Before the adoption of the unbroken continuity of the seven-day week, the Sabbath day stood signally apart as a day of rest, a free and independent day dedicated solely to the service and worship of God without any association of unbroken weeks. Both the earlier Sabbath and the later Sunday, as one day of rest in weeks of seven days, have been outstanding blessings to mankind.

The recurring phases of the new or full moon were the original bases of the month. The monthly periods varied from six, ten or twelve in a year, and in length alternated between 29 and 30 days. There was no common standard as to the beginning of the months as they began with either the new or full moon. Months were also sub-divided into corresponding halves of the waxing or waning moon.

Early Romans observed ten lunar months in their year. These ten months were later increased to twelve with an occasional thirteenth month, "Mercedonius," added. The intercalation of a thirteenth month was under the direction of the priests, and all too often abused for personal ambitions and whims. When the Egyptians accepted the solar seasonal year for the basis of their calendar, the months lost all previous association with the moon. They were each given 30 days, and 12 months constituted a solar seasonal year.

The Egyptians were the first to accept unequivocally the solar calendar with the rotating seasons as the basis. Their calendar year began with the inundation of the Nile, about the 19th of July, and its annual recurrence was the starting point around which their calendar was built. This solar calendar at first had 12 months of 30 days each, but at a later date the year was increased by five days, observed at the end of the year in order to obtain the necessary 365 days it takes the Earth to complete one revolution around the Sun. The five days were observed as feast days under the control of the priesthood. A further discovery that the year was too short by a fractional quarter of a day was not adopted, because of the reluctance by the priesthood and peoples to accept this change. Custom and thought had crystallized into tradition.

The succeeding Julian reform was based on the Egyptian calendar whereby the solar year became firmly entrenched. The year was adjusted to the more accurate number of 365¼ days. The five days were inserted throughout the calendar, instead of observing them as heretofore in a lump at the end of the year. The quarter-days were accumulated until a full day every four years was attained when the extra 366th day, the leap-year day in leap years (originally conceived by the Egyptians) was added

to take care of the fractional quarter-day. The distribution of the five days through out the year was a vast improvement even though the months lost their former orde and regularity. Months had been given from 28 to 31 days, these following in n orderly sequence.

During the reign of Constantine the Great, the seven-day week was introduce into the Julian calendar. Because 52 weeks, each of seven days, do not fit into th 365 and occasionally 366-day year, the weeks being always short by one day at th close of every year, the calendar became a shifting system of time. Constantine als chose the Sunday for the Christian day of worship in order to commemorate for a time the first day of the week on which the Resurrection occurred.

In 1582, Pope Gregory XIII made the last revision of the calendar so as to brin it back once more to the seasonal year which, because of too many leap years havin been inserted, had wandered astray from the seasons. It was eminently a scientifi reform. The spring equinoctial date was established on 21 March, and a new lea year rule was formulated whereby the calendar would keep in step with the season A leap year every four years was retained but only centurial years divisible by fou hundred were assigned as leap years. This reform called for the dropping of ten day

* * *

To progress, man must ever be ready and willing to change and improve co ditions, if he is to develop to his highest potentialities and to better conditions he on earth. The present 2,000 year old calendar calls for improvement in order to me the requirements of present-day needs, social conditions and man's general welfar

Dr. Martin Nilsson, Professor of Classical Archaeology and Ancient History the University of Lund, Sweden, wrote in 1920 that the object of improving th calendar must be (after the full development of the luni-solar calendar) to return t the solar calendar, so that it may be better adapted to the needs of practical life.

The World Calendar under discussion retains the familiar 12 months of the sola seasonal year. It is civil in character and rearranges the number of days within th months more equally, whereby equal quarter and half-years are obtained. Eac quarter-year has exactly 91 days, 13 weeks or 3 months, approximating a season, an each of the 12 months has 26 weekdays plus Sundays. Every quarter-year begins wit a Sunday and ends with a Saturday in this regular and perpetual calendar.

The *first* month of every quarter-year has 31 days and begins with Sunday, th *first* day of the week. The second or *middle* month of 30 days begins with Wednesda the *middle* day of the week. The third and *last* month, also of 30 days, begins wit Friday, the *last* full working day of the week. Each quarter-year has an harmoniou rhythm of 31, 30, 30 days, easy to remember.

Another way by which this orderly arrangement is remembered is to realize th the first Sunday in the first month is the first date; the first Sunday in the second (o middle) month is the fifth date; and the last Sunday in the third (or last) month the third date—giving a number of 1-5-3. This numerical pattern always gives th dates on which the first Sundays will fall within the three months of every quarter-yea

With this orderly and equal-quarter plan of 364 days now established, the 365th y is added after Saturday, 30 December, at the end of the year, sealing and closing ery calendar year. This annual closing day is the new Worldsday, dated W or 31 cember, and is considered a civil world holiday. It is a stabilizing, non-working y, that keeps the calendar steady and balanced every year, like the gyroscope that eps ships and airplanes steady and balanced.

In leap years, the Leapyear Day comes between Saturday, 30 June, and Sunday, uly. It is another civil world holiday and dated either W or 31 June. The letter W nifies the *world* holiday—of national or civic observance. Every new year has its ting beginning on the first day of the week, Sunday, 1 January, with the business ar beginning on Monday, 2 January. (With the Worldsday preceding New Year's y, a Sunday, the following day, Monday, is no longer a holiday but a business day.)

These two civil world holidays are dedicated to good will and the unity of nations d peoples. They are placed outside the regular seven-day week that follows an cient Hebraic custom when the ancient and now obsolete pentecontad calendar, eviously described, was in daily use.

Worldsday and Leapyear Day are like the extra 50th day observed after the bbath, the concluding day of a pentecontad cycle. Worldsday also will be the *ncluding* day of every year in The World Calendar, and the new Leapyear Day, other world holiday, will *conclude* the first half of the year in leap years, by which July will always fall on a Sunday.

With the perpetual World Calendar of 12 months and equal quarters in daily eration, days and dates will always agree. The 1st of January will invariably be on Sunday; Christmas, 25 December, a Monday. There will be exactly 52 Fridays, turdays, Sundays, etc., in a year—no more and no less. Everyone everywhere can l at a glance the day with its date without difficulty or confusion. The stability of ys and dates is like finding the proverbial pot of gold.

International, national and individual events, as well as anniversaries, will always me on the same day and date. For example, every child born under The World alendar will be able to record the day of the week as well as the date, month and ar on which he was born. This is also true regarding outstanding international and tional events which will occur with this perpetual calendar in operation. However, l those who were born on the disappearing days—31 March, May and August—will bserve their birthdays on the day before, on the 30th, similarly as the leap-year ildren do on the 28th of February in common years. The new dates, 29, 30 ebruary and 31 April are, of course, not affected.

In this respect it is of extreme importance to all historians, archaeologists, ilosophers and research workers to know *the day* on which any event will occur ith The World Calendar in use. No longer will the day be the forgotten time-unit our annual records. The date of Pearl Harbor, 7 December 1941, can never be corded in the present calendar as of Sunday; likewise, while the Declaration of Inde-endence was introduced in Congress on 2 July 1776, it is not possible to remember

that it was a Tuesday. We must resort to reference calendars or histories and eve then, all too often, the day has been disregarded.

Labor Day will regularly come on Monday, the 4th of September. This foca point marks the closing of the summer season with its joyous vacations and sport activities, and the stabilization of days and dates will simplify transportation schedule for the many tourists and vacationists.

The curricula of educational institutions will become stable, freeing the facult from many hours of labor and saving large financial costs in the yearly schedul making, compiling of annual catalogs, arranging vacation periods and sports program

Business and industry will derive untold benefits in the planning of productio distribution and sale of merchandise when days and dates are known, not only for th present year but for the past and the future. For the first time, true comparabilit will be had. The World Calendar will greatly simplify the keeping of accounts, record and statistics and the compiling of quarterly statements and reports. The advantag of working with a calendar that is steady and orderly in arrangement, wherein day and dates always agree, and holidays are fixed, will prove of such vast economi savings that the probable extra cost in wages paid on the new civil world holiday (Worldsday and Leapyear Day) will be more than offset. Thus both employer an employee, capital and labor, are gainers with The World Calendar in daily use.

For the legal profession, the present cumbersome method of designating date will disappear. In the United States, for example, Election Day on the first Tuesda after the first Monday in November will be in The World Calendar Tuesday, the 7t of November. This will permit the same number of days for election campaigners fro year to year.

President Truman's now famous presidential campaign in 1948 was short a wee because Election Day fell on the 2d of November, the earliest date on which it ca fall, whereas in the following and a non-presidential year an extra week of campaig ing was had because Election Day came on the 8th of November, the latest dat Such absurdity and unfairness should not be tolerated.

In The World Calendar there will always be 52 regular Fridays, Saturdays, et Never again will a 53d Friday or 53d Saturday confuse weekly salaries with th paying of taxes on a 53d Friday or a 53d Saturday that calls for adjustments th next year. Pay notes and budget systems are simplified and equalized because of th regular three months, 13 weeks or 91 days in every quarter-year.

In the financial field, the quarterly three months totaling 91 days (the first mont has five Sundays) will be considered as 90 days, one quarter of a per annum rate i the *364-day* year, with the 365th day reckoned as a civil world holiday or no working day. In the customary 90-day loan in the present calendar, a borrower woul have to pay three months' or three-twelfths of a year's interest based on a *360-da* year. If a note was made for three months, interest was figured for 90 days and th borrower had to pay interest for one or two days more.

Life insurance policy contracts and birth dates of the insured are easily tabulate

nd accounted for with days and dates always known. The common phrase "as com-ared with the same period last year" will actually be possible in the orderly World alendar. Present and future premium dates will be easily determined without adding xtra days of work to the department of the highly factual insurance business.

Three-month or quarterly statements for corporations and business are for the rst time accurate and comparable, because the series of three months every quarter-ear contain exactly 91 days or 13 weeks. Perfect coordination between day, week, ionthly and quarterly payments is now possible. It matters not on what basis dis-ursements are made, since they will agree at the close of every three months. The alendar has at long last been standardized just as sixty years ago the clock became tandardized.

It had been hoped that the date for adoption of The World Calendar could have een the last day of the year, 1950, by converting 31 December to the Worldsday, nereby closing the first half of the century and opening the second half—the unique nid-centurial point of the 20th century—with The World Calendar in operation. How-ver, with the United Nations postponing action on this matter at its fourth session of ne General Assembly, the date had to be postponed to the next time when both the resent and Gregorian calendars agree—Sunday, 1 January 1956. Such agreement is ssential as it simplifies the transition.

It becomes vitally important that favorable action be taken on The World Calen-ar by the United Nations General Assembly not later than 1951. This will allow a ull year for ratification by the various member nations in 1952. Everyone will then ave three years, 1953, 1954, 1955, in which to make necessary preparations, and The Vorld Calendar can be put into operation on Sunday, 1 January 1956.

In all reforms opposition is present, eventually to be overcome by approval. Iistory has shown that in 238 B.C. the Egyptian ruler, Ptolemy III (Euergetes I) ndeavored to insert an extra day every four years in the calendar in order to keep it in tep with the seasons. Opposition was expressed by the priesthood and the peoples, nd this wise provision was defeated. It was later adopted by Caesar in his reform.

The College of Pontiffs, under whose jurisdiction Numa Pompilius placed the arly Roman calendar, also used its influence and power unwisely by inserting the xtra thirteenth month, "Mercedonius," at will, thereby causing untold confusion and ifficulty. It was not until Julius Caesar adopted the solar seasonal year and intro-uced the leap-year day that the calendar returned to its scientific foundation.

However, Caesar failed in his desire to establish the beginning of the year on the vinter solstice, 25 December, and had to retain the customary 1 January of political ature when consuls assumed their civic duties. Because the new moon came on January in the year of adoption, 45 B.C., and the people were still accustomed to he former moon calendar and superstitions, they opposed this additional change.

Even as late as 1582, when Pope Gregory XIII further amended the calendar vhereby it would conform more accurately with the seasons, he could not resist his eligious prerogative. He chose 21 March for the spring equinoctial date in order to

commemorate the first Christian assembly held at Nicaea in A.D. 325, when the vernal equinox came on that date. He decided that that date was more significant than the ancient equinoctial date of 25 March. Once more religion rather than science prevailed.

Today, similar opposition by numerically small religious groups is expressed to Worldsday and Leapyear Day on the ground that these days will destroy the unbroken continuity of the seven-day week since time immemorial. We have seen, however, that this concept was a priestly device that originated around the time of the Babylonian captivity.

Even of much more recent date, religious groups opposed Standard Time with its International Date Line on the ground that it interfered with "God's Time," only to accept it upon its adoption with everyone else.

Today, the conflict between science and religion is happily diminishing. It is generally recognized and accepted that the calendar is a scientific grouping of various time-units that make up a year and conform to the laws of nature, fashioned by the Creator. The religious feast days within the calendar, such as Easter, are under the direct jurisdiction of religious authorities.

This broader concept and clearer understanding of the two separate functions of civil and religious matters follow closely the command laid down by Jesus: "Render unto Caesar the things that are Caesar's and unto God the things that are God's."

Time-reckoning, the calendar, in the words of Dr. Nilsson, has now been emancipated "from the fetters of the religious cult" and is free to develop greater perfection along scientific lines without minimizing in any way religious feast days observed within the calendar. The World Calendar has acquired "a majestic order of the universe."

The World Calendar is a civil and scientific time-plan for the use of the whole world, regardless of race, creed, color or country. It is universal in scope, universal in application. The new Worldsday every year and the occasional Leapyear Day in leap years in their universal observances cannot fail to inspire and unite man. For time is truly the greatest world unifier. It has well been said that Time, which takes survey of all the world, should itself be one and the same for all the world. Certainly civilization now is desperately in need of a world unifier that will serve the common good of all humanity.

In the words of the ancient philosopher Plato:

"Now that the world has once been set in motion, and is no longer held fast under the tyranny of custom and ignorance; now that criticism has pierced the veil of tradition and the past no longer overpowers the present—the progress of civilization may be expected to be far greater and swifter than heretofore."

The World Calendar with its two new world holidays, bathed in a spirit of oneness in their worldwide observances, may well be the "open sesame" for which we are all eagerly seeking.

CAPRICIOUS TIME UNITS

By the Reverend Valentino Panzarasa
Professor of Philosophy, Pontifical Salesian Academy, Turin, Italy

OUR calendar is called "Gregorian" after Pope Gregory XIII, who corrected the Julian calendar according to a plan drawn up for him by Luigi Lilius. The proposal was examined and approved by mathematicians and astronomers, and became effective in 1582. The general make-up and layout of this calendar, which we all use constantly in our daily life, is well known to every man, woman and child.

Astronomically it is still an excellent job, making our years precisely equal to the solar markers. But the internal division of it into months and weeks—or what might call the "empirical distribution of its subordinate units"—is open to well-founded criticism.

Why has the number of days been allotted to each month in such a capricious manner? Could the number of days in the months have a more harmonious, symmetrical and periodic distribution? Is it necessary or convenient that the successive quarter-years should have 90, 91 and 92 days, making them incomparable?

Let us examine the lengths of the months and see whether we cannot provide a better balanced and more harmonious arrangement. Why does February have only 28 days? Can't it have 30 days, like other months, and serve us better?

The irregular months lead to real difficulties, especially where statistics are concerned. Quick comparisons are difficult and misleading. The figures are subject to variations of six to ten per cent, owing to a difference of two or three working days in the months.

In daily life, everybody encounters these calendar difficulties. Workers pay a full month's rent for little February, although their pay envelope is smaller.

We don't need to discuss the illogical names by which our months are known. These names come to us from traditional sources many centuries old, and now meaningless. Four of the months have numerical names (September to December, meaning seventh to tenth), although these numbers no longer correspond to their order in the year.

In religious life our calendar offers equally forceful grounds for criticism. Why does Easter change its monthly date every year? It is certain that the Resurrection occurred on a definitely fixed day. Why not celebrate it on the same day every year? Christmas is invariably observed on 25 December; why should not the Resurrection date be similarly fixed?

The mobility of Easter also alters the dates of all the important church festivals dependent on it, and thus leads to countless conflicts. I recall vividly how annoying this was in South America, where Easter comes in the autumn; the wandering Easter caused havoc with school terms and university examinations.

The movable feasts are a source of difficulty when they conflict with religious,

lay and national anniversaries. For the clergy they have many annoying results, for Saints' Days are fixed, and get tangled up with the movable observances.

In a perpetual calendar, a fixed Easter will be a great boon to all those who observe religious days and dates. The liturgical calendar would be made very simple indeed, and there would be a substantial saving in time and money.

How handily all our present difficulties are met in The World Calendar! The quarters are all identical; each begins on Sunday and ends on Saturday. The dates of the month always fall on the same weekdays. And this excellent perpetual system of time measurement is obtained with a minimum of change. All that's needed is for February to take two days from March to complete its 30 days; then March takes one day from April, April takes two from May, May takes one from June, June takes one from July, and July takes one from August. Thus, with a scarcely perceptible alteration, a symmetrical calendar emerges.

The use of the "Worldsday" at the end of the year is the only important alteration, an ingenious device for making the calendar perpetual. It encounters some opposition, of course. But, in any division of the year into handy subordinate units, there is bound to be a period of time to be filled out in some way. One cannot change the movement of the earth around the sun. And here we have a practical way of meeting this difficulty and transforming our calendar into a measuring system as accurate and useful as a yardstick.

OBITUARY NOTES

AMONG the world clergy, two eminent supporters of calendar reform have died during the past few months, the Most Reverend Archbishop Germanos of the Eastern Orthodox Church and the Right Reverend Ernest Milmore Stires, Bishop of the Episcopal Church.

Archbishop Germanos died in London on 24 January, aged 78. He had been for many years the deputy head of his great church, with headquarters in London, acting for the Patriarchate in all matters of contact with the Western churches and nations. It was as the spokesman for the Patriarch that he set forth the favorable attitude of his denomination toward The World Calendar, in an article published in the *Journal of Calendar Reform* in December 1933. "In the matter of general calendar reform," he said, "the Eastern Orthodox Church [with its 140,000,000 followers] has gone further than any other great church body (1) in agreeing to a general revision of the calendar; (2) in opposing any 13-month scheme of calendar reform; and (3) in adopting a perpetual 12-month equal-quarter calendar along the lines urged for many years in France, Switzerland and other countries."

Bishop Stires, head of the Diocese of Long Island for nearly a generation, died in Palm Beach, Florida, on 12 February, aged 84 years. He became a member of the American Advisory Committee of The World Calendar Association in 1938, after having been a leader in securing the Protestant Episcopal Convention's endorsement of The World Calendar in 1934. His most recent statement on the subject was: "When the proposal came before our General Convention I was glad to advocate it most warmly. It has everything to commend it, and I do not know of any reasonable objection which can be advanced against it. It is bound to win. May the victory come soon!"

EXCERPTS AND REVIEWS

Problems of Time Measures

By Frank Julis
of the Czechoslovakian Normalization Committee

THIS twentieth century, so rich in politi-
cal, social, agricultural and scientific im-
ovements, will surely be memorable also
a revision of the venerable calendar
ich has served us fairly well since the
ys of Pope Gregory XIII. It needs re-
ion, to meet the requirements of a world
ere so many things have changed sub-
ntially—distances, tempos, customs and
des of life.

It is strange indeed that we have delayed
long in fixing up our calendar. For a
ndred centuries prior to Julius Caesar,
ople and nations tinkered with the calen-
r, seeking first in one way and then in
other to make it a more perfect and suit-
le instrument. It is one of the toughest
athematical problems that face the inquir-
g mind, because absolute accuracy is un-
ainable in the adjustment of its basic
ronomical units, and all that can be done
to reconcile them on the neatest and most
icable mutual relationship. Week, month,
ason and year simply won't mesh perfectly
gether; man-made devices lubricate the
shing gears and let the wheels go round
th a minimum of conflict.

Benefits of the new World Calendar are
irly obvious and need not be re-stated
re. We of Czechoslovakia are specially
ware of the economies which will come to
dustry and agriculture. Our Ministry of
reign Affairs has stated: "We favor an
celerated introduction of The World
lendar."

We have supported this type of revision
r twenty years, and we have established
r permanent representation as a member
the calendar reform committee of the
ternational Normalization Commission (ISO), with headquarters in Geneva and branches throughout the world. We feel that all peoples of good will should welcome the effort to legislate this excellent project, which will help to bind the world in one common Bond of Time.

Should We Change?

By Dorothy Tucker
Research Assistant, Tennessee State Planning Commission
(In Tennessee Planner, December 1950)

HAVE you ever heard the question, "What day does Christmas come this year?" or "How many Saturdays will there be in August?" In order to plan our personal lives, similar questions concerning our calendar are posed innumerable times by each of us. Business, too, is vitally concerned with present calendar variations. "How many working days were there last quarter?" and "How does this compare with the preceding quarter or with the corresponding period of last year?" These are matters that affect production, payroll, sales. All of us are harassed by the troublesome irregularities of the Gregorian calendar we now employ.

The present calendar, adopted in this country in 1752, represents improvements over previous ones, and at that time it was the most convenient that had been devised. It conforms to the specifications which a calendar must have—that is, it records the period of time required for one revolution of the earth about the sun, which we know as the year. This interval, of course, is approximately 365¼ days. Our other units of time—the month, which originally measured the moon's revolution around the earth, and the week, traditionally composed of seven days, one day being the time it takes the earth to turn on its axis—cannot be expressed precisely in terms of the calendar

year. Thus a perfect calendar is impossible.

But because these units are incommensurable, the Gregorian system results in 14 different kinds of years and 28 varieties of the month. Months and quarters vary in length, the number of working days in a month is inconstant, days and dates never agree from year to year, and holidays turn up anywhere within a range of a whole week, as do birthdays, anniversaries and other dates of personal significance.

These irregularities cause considerable financial losses each year to labor, industry and the home. Labor absenteeism, which results when a working day is isolated between a Sunday and a holiday, causes a loss of millions of dollars in wages to workers. That this absenteeism reflects decreases in production and sales is apparent.

Schedules for the opening of schools and convening of courts have to be revised each year, all because of our inconvenient calendar. Many business offices and agencies, including the United States Bureaus of the Budget and of Standards, have discarded it as inadequate and adopted a makeshift system of their own.

It is not hard to see what a simplified calendar, eliminating all these disadvantages, would mean to the world. But is there such a calendar? In the face of the familiar units by which we reckon time, but which are not equally divisible or multipliable by one another, is there a plan by which we could enjoy the conveniences of having days and dates agreeing with one another, year after year, and equality and stabilization of comparable periods of time?

There have been more than 500 plans advanced by calendar reformers. The League of Nations studied each, and rejected all but one. The one which they deemed worthy of further consideration is called The World Calendar, and its advocates have made great strides in public support since it was developed in Switzerland in the 1910's.

If the obstacles can be overcome, then this balanced, regular and perpetual calendar will take the place of the unsettled one we now struggle with, and thus become a vital part of our heritage to the future.

Progress Toward Revision

By Ellery Stewart

(In Hartford, Conn., Times)

ATTEMPTS to repair the creaking ma chinery of time measurement continue un abated and with increasing enthusiasm. It' the battle of The World Calendar Associa tion to bring into being a stable and per petual calendar for all the world, a simpl fied form guaranteed to end confusion.

The World Calendar has been the sub ject of hot debate in many lands for man years. Prospects for the adoption of the new calendar have never looked rosier.

We've always felt very sorry for poo old Father Time. If anybody has ever bee kicked in the seat of his toga by an un grateful world, it's Father Time. He ha worked long and faithfully at a thankles task without grumbling; and without pa or recompense, to say nothing of overtime Although he is the world's oldest worke in point of service, he has passed out mor and more holidays and vacations for th rest of us, without a day or a second h could call his own.

Yet what have we given him for hi pains? Abuse and complaints. Since tim began, man has been poking fun at Fathe Time and monkeying with his time-table and calendars. We've teased and heckle him so much it's a wonder he hasn't lai down his well-worn scythe long before thi leaving his job to those who think the know it better.

There are many time-reckoning system in use all over the world, leading to a much confusion as the scores of language and dialects. For instance, Israel this yea celebrated New Year 5711, while in Mecc holy city of the Mohammedans, it is th year 1369 and in Addis Ababa it is 1942.

In India, one newspaper bears six di ferent datelines for the six racial group subscribing to six different calendars. B sides the widely-used Gregorian, Mohan medan and Hebrew calendars in India an Pakistan, 14 other calendar systems ar locally important.

FROM THE MAIL BAG

I am very much impressed with the little der, "The World Calendar and Religion," ich reached me the other day. It is a nderful set of endorsements from a widely resentative group of persons in many ferent communions and in many parts the world. I hope that those who receive will be impressed with what it says and at it implies.—Dr. Henry Smith Leiper, sociate General Secretary, World Coun- of Churches, New York City.

During the past ten years I have prepared Liturgical *Ordo* for eight Catholic di- ses in South India. So I have had a good al to do with calendars and can well ap- eciate the advantages of The World Cal- dar. . . . The witty Editorial from our ily newspaper, *The Hindu*, which you blished in your December *Journal*, gives idea of our Calendar problems in South dia where each community and sect fol- ws its own calendar.—Rev. R. V. Hague, ., St. Joseph's College, Trichinopoly.

It seems incredible that there should be much opposition to a scheme which pre- nts nothing but advantages to all con- rned. Of course it is really more indiffer- ce or laziness than downright opposition. H. S. Wreford-Glanvill, *Times of Brazil*, o Paulo.

It is my sincere hope that The World lendar will be adopted before long, so at we can have the advantages of a bal- ced, regular and perpetual system of time easurement.—Ali Asghar Hermat, former inister of Foreign Affairs, Teheran, Iran.

We have published a thorough article on ie World Calendar because all scientists pport it.—Glen W. Warner, Editor, *School ience and Mathematics*, Lakeville, Indiana.

For anyone trying to run an office, the regularity of the present calendar is a adache, particularly the shifting of holi- days and other dates. A reform of the cal- endar make sense to me.—C. B. Fogle, Metro-Goldwyn-Mayer, San Francisco.

In South Africa I have been happy to spread news of calendar reform.—W. H. Law, Playing Fields Assn., Cape Town.

The real accomplishment of this reform is of great importance.—Luisa Shaeffer de del Rio, President, Chilean Association of Non-Governmental Organizations for the United Nations, Santiago.

I look forward enthusiastically to the put- ting into force of your ideals.—Antonio de Azevedo, Printer, Santos Dumont, Brazil.

Your *Journal* has given me a new slant on this business of calendar reform. I had no idea so much work had been done toward achievement of this excellent improvement. —N. R. Barfoot, Fiberglas, Sarnia, Ontario.

Here is a subject which needs to be threshed out from every aspect and view- point. It is rational, economical and time- saving to get the best calendar that can be devised.—Dr. M. A. Sherif, Hyderabad, India.

Our present calendar system makes court terms vary considerably. It would be a great thing to have a perpetual calendar.— G. S. Steele, Attorney, Rockingham, N. C.

I defy anybody not hopelessly prejudiced in advance to make a study of The World Calendar and come up denying that it con- stitutes a vast improvement over the present system.—W. Earl Hall, Managing Editor, *Globe-Gazette*, Mason City, Iowa.

One of the difficulties we experience in operating under the present calendar is the comparison of fiscal periods. They vary principally in the number of working pe- riods.—H. J. Mammoser, Tokheim Oil Tank and Pump Company, Fort Wayne, Indiana.

EDITORIAL PARAGRAPHS

Certainly the present calendar is changeable and irregular. It is a nuisance to the ordinary man and a major tribulation to those who have to keep business records and make comparisons.—*Montreal Gazette.*

When we get through with all these fool wars, let's hope business interests will recognize the outstanding importance of a new calendar.—*Bowling Green (Va.) Progress.*

Today's calendar is a confusing mixture of many ideas, theories and religions, going back in its origins over 6,000 years.—*Norristown (Pa.) Times Herald.*

How soon the new calendar will become a reality depends on whether the nations of the world can get together on this subject. That's something never easily accomplished.—*Austin (Minn.) Herald.*

Isn't there anybody in Washington who would like to go down in history as the man who straightened out the mess Julius Caesar created?—*Washington (D. C.) Times-Herald.*

You'll have an easier time remembering your wedding anniversary and making advance holiday plans in the world of tomorrow. Every year's calendar will be identical under the calendar reform now under consideration by the United Nations. —*Indianapolis Star.*

There's no argument against the new plan; the main obstacle is the reluctance of the human race to make changes in established practices. Inertia ought not to stand in the way of a good idea.—*Norfolk (Neb.) News.*

Logical year for adoption of the new calendar is 1956.—*Philadelphia Bulletin.*

Because of holidays falling on awkward weekdays, especially on Tuesday, Wednesday and Thursday, workers will lose nearly half a billion dollars of wages in 1952.—*Toronto Globe and Mail.*

No single group should be expected to do all the work looking toward adoption of a new calendar, for it will take the wholehearted support of a big majority to bring about this change.—*Woburn (Mass.) Times.*

Once the proposed perpetual calendar is explained, you see how simple it is. With identical quarters it will be memorized as readily as the multiplication table. —*Westfield (Pa.) Free Press.*

People who are close to school administration are on record as favoring adoption of The World Calendar.—*Glen Ellyn (Ill.) Instrumentalist.*

Here at last is a sensible calendar to fit needs of commerce as well as requirements of astronomy.—*Tulsa (Okla.) Tribune.*

There's no doubt about the comfort and convenience this new calendar arrangement would produce for the benefit of the working world.—*Thomasville (Ga.) Times.*

Without sacrificing any of the good features of our existing calendar, a readjustment can be made that will strengthen its usefulness for the purposes of a modern world.—*Thomasville (N. C.) Tribune.*

This revised calendar, which can be adopted in any year that begins on a Sunday, such as 1956, will be a pleasant and efficient improvement.—*Schwenksville (Pa.) Item.*

The movement to balance the calendar and organize it in a more orderly manner has gained considerable recognition and backing.—*Columbia (S. C.) State.*

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National Chamber of Trade (English)
London Chamber of Commerce
New York State Chamber of Commerce
Chicago Association of Commerce
Board of Trade, Halifax, Nova Scotia
Ottawa Board of Trade
Montreal Board of Trade

SCIENCE

American Academy of Arts and Sciences
American Association for the Advancement of Science
American Philosophical Society
Seventh American Scientific Congress, Mexico City
International Astronomical Union, Commission 32
Royal Canadian Institute
Australian National Research Council
American Psychological Association
National Institute of Planning and Social Reform of the Republic of Cuba
Royal Astronomical Society of Canada
Science Society of China
Royal Society of Queensland
American Assn. of Scientific Workers
Mathematical Association of America
Academy of Arts and Sciences, Barcelona, Spain
Committee for Maritime Meteorology
Royal Society of New Zealand
Royal Society of New South Wales
Astronomical Soc. of Spain and America
Ninth Gen'l Chilean Scientific Congress
Colombian Academy of Exact Sciences
American Psychical Institute
Amer. Society of Agricultural Engineers
Australian Institute of Physics
Institute of Radio Engineers
Academy of Science, St. Louis

LABOR

International Labor Organization Conference, Santiago, Chile, 1936
Canadian Congress of Labour
Canadian and Catholic Confed. of Labour
Trades and Labour Congress of Canada
Canadian Telephone Employees' Assn.

EDUCATION

World Federation of Education Assns.
National Education Association
American Educational Research Assn.
National Council of Geography Teachers
Agricultural History Society
Duodecimal Society of America
Int'l Assn. of Y's Men's Clubs
Nat'l Assn. of Education of Chile

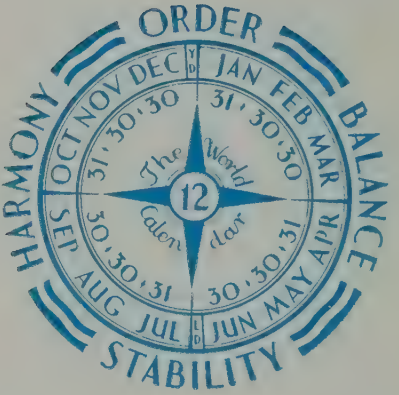
BUSINESS

American Institute of Accountants
American Industrial Bankers Association
Nat'l Fed. of Business and Professional Women's Clubs
Canadian Manufacturers Assn.
Inter-American Press Congress
International Affiliation of Sales and Advertising Clubs
Newspaper Advtg. Executives Assn.
Canadian Retail Federation
Controllers' Congress, National Retail Dry Goods Association
Mexican Hotel Association
Industrial Association of Austria
Assn. of Consulting Management Engrs.

MISCELLANEOUS

Amateur Athletic Union of the U. S.
Peoples Mandate Committee for Inter-American Peace and Cooperation

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



After reading please pass on to others.

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OAKLAND
JUL 9 1951

Journal of CALENDAR REFORM

STATE DEPARTMENT & CONGRESS

June 1951

THE WORLD CALENDAR

1ST QUARTER

JANUARY						
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3RD QUARTER

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W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days; 13 weeks; 3 months; each quarter is repeated four times.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.

ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXI JUNE, 1951 No. 2

IN Washington, the State Department has just completed a thorough re-examination of the subject of calendar reform and The World Calendar. This was done, presumably, as a result of persistent criticism of the Department's negative attitude toward this project at the time it was proposed for action at the United Nations.

For the future, all matters relating to calendar reform and The World Calendar will be handled at the State Department by James F. Green, the Acting Director of the Office of the United Nations Economic and Social Affairs of the United States Department of State.

As a result of the Department's re-examination, three specific decisions have been made: first, that the State Department will not concern itself with any possible religious aspect of calendar reform; second, that the Department will not take definite action toward international adoption of a new calendar without mass popular support within the United States as demonstrated and expressed through Congressional channels; third, that in spite of this currently negative attitude, the Department is "sympathetic" to the efforts on behalf of The World Calendar, and approves the supporters of revision as "seeking to strengthen and improve the patterns of world understanding."

Under the first of these three decisions, it is announced that the State Department has decided to deal only with the civil, social and economic phases of calendar reform, leaving out any religious aspect which may arise. This decision eliminates certain confusions and confines activities to a field where governmental jurisdiction definitely applies. It is in accord with the American principle, separation of church and state.

The second decision is phrased as follows: "It has been concluded that, while proposals for calendar reform have many merits, it would be extremely difficult to put such projects into effect until mass popular support within the United States has been demonstrated. The Department of State therefore feels that it cannot devote further attention to the question of calendar

reform until such widespread support has been expressed through Congressional channels. Should the Congress take the lead in a proposal of this kind, the Department of State would feel not only that it had a mandate, but also that the chances of success of international action would be more assured. In view of the foregoing considerations, the Department does not feel that it can take any initiative in placing calendar reform on the agenda of any international body. If other governments desire to do so, the position which any United States Delegation will take at a particular meeting will have to be determined at that time in the light of Congressional and public opinion and *with regard to the views of* other delegations."

It will be noticed that the State Department stipulates that "mass popular support" must be "expressed through Congressional channels." This stipulation is contrary to views in Congress. Senator Estes Kefauver on 7 June 1949 said: "Should the United Nations General Assembly take favorable action, I am confident that the Senate's Foreign Relations Committee will report the Bill [for adoption of The World Calendar] favorably, so that action can be taken on it." His position was restated on 26 May 1951: "I feel that Congress would give the matter favorable consideration if it were recommended by the United Nations."

There can be no question that The World Calendar proposal is essentially an international subject for international approval.

The attitude of the State Department is that support must be expressed through Congressional channels in order for it to act. The attitude of a leader in Congress, one who supports and has introduced a bill for the adoption of The World Calendar, is that the matter should come before Congress as a recommendation of the United Nations.

Obviously action in the United Nations would be enormously strengthened were the delegation of the United States to cooperate in deciding on the best solution; and toward obtaining this cooperation, Congress could give its support, as it did in 1928 and 1929, by requesting the President that the U. S. Government participate in the U. N. deliberations. In either or in any case, support must be demonstrated. Remember, citizens, that our Constitution assures to everyone the right to petition the Government.

Come then, supporters in America and everywhere, in every nation, and make known to your Governments and to the United Nations your support. Write to the Economic and Social Council of the United Nations as you would to any of your own Governmental agencies, departments, ministries or representative bodies. Please tell us when you have written and to whom, so that we may know our strength.

There must be no delay, if adoption of The World Calendar is to be accomplished according to program—international approval in 1952 or 1953 for the changeover on Sunday, 1 January 1956.

Journal of

CALENDAR REFORM

JUNE 1951

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United Nations

27 avril 1951

Declaration de M. Laugier
ancien Secretaire General adjoint
charge des questions sociales
aux Nations Unies ..

-

Je regrette beaucoup que le Conseil Economique et Social, n'ait pas jugé opportun de traiter le problème actuellement de la Reforme du Calendrier, au moment où la question lui a été soumise .. Sans doute le Conseil etait à ce moment préoccupé par des questions d'une immediate urgence ; il n'en est pas moins vrai qu'une occasion a été perdue, en raison des facilités particulieres que presentait l'année 1950, pour introduire la réforme dans le monde.- Personnellement je suis un chaud partisan, de cette reforme, toutes les fois que le problème sera posé, je saisirai l'occasion pour defendre votre projet ; j'approuve le combat que vous conduisez courageusement et infatigablement ; et je vous souhaite, dans l'interet général, un succès complet et prochain ..

Henri Laugier

H. Laugier
Ex. Secretaire General Adjoint
charge des Questions Sociales
aux Nations Unies

LAUGIER—A "WARM PARTISAN"

By Paul-Louis Hervier

WHEN the Secretariat of the United Nations was organized, back in 1946, Secretary-General Trygve Lie was reinforced in his formidable job by a cabinet of eight "Assistant Secretaries-General," the most distinguished group of executives in world history. Among these eight men, the oldest and perhaps the ablest—certainly the most genial, witty and versatile—was Henri Laugier of France. To him was assigned responsibility for the international activities grouped under the U. N. Economic and Social Council (ECOSOC).

One of the subjects embodied in this category was calendar reform, with which M. Laugier found himself in such complete agreement that, when he left his post a few weeks ago, he took occasion to issue a special "declaration" as to the international importance of this project. His declaration, reproduced in French on the opposite page, says:

"I greatly regret that the Economic and Social Council did not judge it opportune to deal with the problem of the Reform of the Calendar, at the time the question was submitted to it. Without doubt the Council was at that moment preoccupied with questions of immediate urgency; it is none the less true that an opportunity has been lost, because of the particular facilities which the year 1950 presented for introducing the reform throughout the world. Personally, I am a warm partisan of this reform; each time the question is presented, I will seize the occasion to support your project; I approve the fight which you are waging courageously and persistently; and I wish you, in the general interest, a complete and early success."

Laugier's phrase "*in the general interest*" is a favorite with him, expressing his belief that calendar reform is a project which can have a far-reaching effect toward uniting nations and demonstrating how effectively they can act together in causes of world-wide importance.* On an early occasion at the United Nations he said, impressively:

"Political problems tend to divide the world, whereas social and economic problems have the tendency to unite nations. Therefore there is a paramount impor-

* In a letter to the President of The World Calendar Association, written shortly after his return to Paris, M. Laugier said: "Dear Miss Achelis: I greatly regret not having been able to see you before my final departure from the United States. But the few days I spent in New York between my return from South America and my sailing were rather hectic days, with the visit of President Auriol and the last ceremonies of my departure . . . As concerns The World Calendar, I can only renew my advice to you. The question will be taken up again *only* upon the initiative of the Economic and Social Council, *at the express request* of a delegation. It is necessary then once again to contact the various delegations of the Council, and among them find one which will take the responsibility of introducing the question once more, and of supporting the reform before the Council and the Assembly . . . Accept, dear Madame, the assurance of my strong friendship and my every wish for the success of your fight."

tance from the viewpoint of world peace and security to be active in solving international economic and social problems. Should we at the United Nations be content, then, with mere liaison and coordination among existing international bodies —or should we be more ambitious and creative, and boldly initiate international action?"

The cause of calendar reform was one item in which he was convinced the United Nations could advantageously take the initiative, and carve a new pathway of joint legislation toward a worth-while goal.

M. Laugier's departure from his cabinet post with Trygve Lie is deeply regretted by his associates. The President of ECOSOC, Hernan Santa Cruz, of Chile, said sadly, "He has served us with devotion, efficiency and extraordinary distinction." Laugier was always a refreshing and stimulating participant in international gatherings and conferences. One of the few bachelors in the U. N. Secretariat, he was a brilliant conversationalist, a good story teller, an interesting critic of the arts, a keen judge of food and tobacco.

His remarkable versatility was always in evidence: in his sixty years of life, he had been physician, soldier, teacher, author, politician and government official. His teaching career has included professorships at the Universities of Mexico, Sao Paulo, Lima, Algiers and Montreal; his research activities embrace a list of more than 200 books and monographs. He was one of the founders of the New School of Social Research in New York.

When the Germans swept into Paris, he was head of the French National Center of Scientific Research, a post from which he was summarily dismissed by the Vichy government. He made his way to England, reported to General Charles de Gaulle, and was sent to America to conduct research experiments in the treatment of wounds.

Laugier's public utterances have been models of fluent French, sculptured into paragraphs that glow and sparkle, carrying at the same time a sense of deep conviction. His friends delight to recall a speech he made at a UNESCO convention in Cleveland—a rather dull meeting which was suddenly electrified by his dramatic presentation of the international situation. He spoke as a scientist, not as a politician, and his reputation as the foremost research physiologist of France gave weight to his words:

"I am making no political statement when I note the incontestable scientific fact that we live today in the most crucial period of the world's history. To one side lies the destruction of all that has been achieved in three centuries by a civilization built with sweat and tears, the endless stirrings of man through the ages. This destruction is here, within reach; it is actual, and can be precipitated by a single sudden act of individual or collective folly.

"On the other side lies the prospect of building slowly and painfully, but assuredly, the golden age which will place the immense riches of science, both acquired and to come, at the service of man's well-being and happiness.

"The choice will come, we cannot tell when, but certainly soon and perhaps very soon. This choice, the most historically important in world annals, will be made by men and peoples through their national governments and international organizations.

"Let us never lose sight of the fact that despite the immensity of the material means made available by science, it will be human brains and human souls—it will be man himself who will make the decision.

"Recognition of this fact need not make us pessimistic. On the contrary it should provide a powerful motive for a superhuman effort to mobilize our minds in the service of the progress of freedom and justice.

"The perfect world brotherhood is still a

distant dream, but the building of a society that will be tolerant and respectful of the rights of others, that will permit different ideologies to live together in perfect freedom, that will allow the co-existence and friendly competition of varied ways of thought, is probably achievable in the near future."

M. Laugier's New York friends will not forget him. They will remember especially his abrupt "Americanization by Cadillac"—the occasion in his first weeks at Lake Success when he was severely injured while trying to pull an elderly woman from the path of an automobile. That accident cost him a month in a Long Island hospital, a prolonged further period in a wheel chair, and a slight permanent limp. Back in Paris, he will no doubt continue active and useful in the international scene, a tower of strength to all those striving for world brotherhood and peace.

Born in the Alpine village of Mane, with a district school superintendent for a father, Henri Laugier was a precocious *gamin* who won without effort the most prized provincial scholarships, and then proceeded to take with equal ease the doctorates of medicine and science at the University of Paris, topping these off with the highest degree in the French educational system, the *agrégé*. In the first World War he won the Croix de Guerre with three citations, and after the peace was chosen as chief of cabinet in the Ministry of Education.

He was France's pioneer in public health instruction under the title of Professor of Hygiene. Thence he moved to a full professorship at the Sorbonne, and at the same time occupied the new chair of the "physiology of labor" at the government Conservatory of Arts and Crafts. During the next few years he established the ambitious Bureau of Scientific Research, organized the Palace of Discovery, and edited the learned review *Travail Humain*.

Not long afterward, he was elected "Scientist Laureate" of the French Academy of Science and the Academy of Medicine. His writings are mainly scientific, dealing either with the general physiology of the muscular and nervous system, or the applied physiology of human fatigue, biometry and personnel selection and orientation.

In his time off, M. Laugier is a devotee of modern art and the owner of a notable collection of paintings by Picasso, Matisse and Braque. This phase of his active life has undoubtedly been influenced by a long-standing personal friendship with Picasso.

Few foreign visitors have made themselves so completely at home in America. "I soon discovered the moving warmth of American hospitality," he wrote. "A tradition of fraternal welcome has penetrated the hearts of men and the structure of institutions in this country.

"I have discovered in the United States a certain alertness of public opinion, based on the right of each individual and each group to express its thought on domestic and foreign problems—and based also on the respect in which each individual and each group holds the thoughts of others. America in this is a model and an example to all nations. I have been an attentive listener at so many round tables, so many forums, so many seminars, so many study groups, that the free information immediately available to the citizen of the United States seems to me the richest in the world."

Author Meets Critic

PROFITS FROM REVISION

By Joseph M. Naab, Lyndhurst, N. J.

IN my article for the March issue of the *Journal*, I made a statement which has brought me many inquiries and has also been widely quoted—sometimes doubtfully—by the press. I said: "*Calendar reform will enable American business to effect savings annually sufficient to pay the interest on the national debt.*"

Says the *Philadelphia Inquirer:* "Naab's views are rather startling, and not everyone will agree with him when he asserts that calendar reform will pay the interest on the national debt." A California newspaper editor comments: "Naab doesn't explain how he arrived at that conclusion."

I can't say I'm surprised at these questioning comments. I knew that my statement about the national debt might lead to some very provocative discussion. That's fine. And I'm willing to stand up and defend my position.

Take just one small unit of calendar expense under our present system—which I stressed in my article—namely, the effect of midweek holidays on business and industry. From my own practical experience in the operation of controlled production in manufacturing procedure and the application of wage incentives, I estimate that as much as 1.5 per cent loss may result in a period of one year, due to starts and stops in the even flow of production and distribution. Most of this loss would be saved under a stable and consistent calendar. If a 1.5 per cent loss is charged against the national product of 300 to 350 billion dollars, you will get from this item alone a saving almost equal to the present interest charge on the national debt.

There are, of course, many other economies from calendar reform. Take the comparatively minor matter of annual expense for printing calendars. A British pamphlet on calendar reform says: "We scrap millions of calendars every year and think nothing of it. No sensible person would think of throwing his watches and clocks into the dustbin at the close of the year; yet that's what we have to do with our calendars. The new calendar, however, will remain the same from year to year. But calendar manufacturers need not fear financial loss, for quality of workmanship will replace quantity. Calendars, in home or office, will be articles of beauty."

One reason why I didn't take the space to go into details in my challenging statement about paying the interest on the national debt through calendar reform economies is that, under our present tangled national accounting, it is pretty hard to give anything more than a guesswork figure as to how much interest is paid on the national debt, or to find even an exact total for the national debt itself. My guess is that the national debt is somewhere between 250 and 290 billion dollars, and that the interest charge on this total averages about 2 per cent.

CANADIAN LABOR ASKS FOR ACTION

AMONG all the nations in the world today, Canada appears to have taken the lead in active support of calendar reform. New evidence of this came along recently, when a statement was issued by the Dominion Department of Labor announcing the overwhelming support of organized labor for a revision of the Gregorian system. The announcement, dated 15 April 1951, stated forcefully:

"During the first two weeks of April, organizations representing more than 83.5 per cent of Canadian organized labor asked the Government to take steps to advance adoption of The World Calendar.

"The new calendar plan has also been endorsed by such bodies as the Canadian Manufacturers Association, the Canadian Retail Federation, and various local Chambers of Commerce and Boards of Trade, while the Canadian railways have signified the plan is acceptable to them."

The labor organizations included in the "more than 83.5 per cent" are three in number—the Trades and Labor Congress of Canada (which has American Federation of Labor affiliation), the Canadian Congress of Labor, and the Canadian and Catholic Confederation of Labor.

Announcement of the action of these bodies was made in a departmental publication bearing the names of Milton F. Gregg, Minister of Labor, and the Deputy Minister, A. MacNamara. The statement continues with a brief explanation of the proposed new calendar. It says:

"Calendar reform is of interest to both labor and management, and the recent endorsement of The World Calendar by workers' and employers' organizations has prompted this explanation of its main features:

"Just what is The World Calendar? Briefly, it is a reformed calendar, promoted since 1930 by The World Calendar

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Editor's Note: The French text of the Labor Department's statement is as follows:

La réforme du calendrier intéresse et les employeurs et les travailleurs; et le fait que des groupements patronaux et ouvriers approuvaient récemment le calendrier universel appelle l'explication ci-dessous de ses principales caractéristiques.

Au cours des deux premières semaines d'avril, le Congrès des Métiers et du Travail du Canada, le Congrès canadien du Travail et la Confédération des travailleurs catholiques du Canada, représentant ensemble plus de 83.5 p. 100 de l'effectif ouvrier organisé au Canada, demandaient au gouvernement de prendre les mesures nécessaires pour hâter l'adoption du calendrier universel.

Le nouveau calendrier a reçu en outre l'approbation d'organismes tels que l'Association des manufacturiers canadiens, la Fédération des marchands détaillants du Canada et de plusieurs Chambres de commerce et Boards of Trade locaux, tandis que les chemins de fer du Canada ont indiqué qu'ils étaient prêts à accepter le plan.

Qu'est-ce au juste que le calendrier universel? Bref, c'est un calendrier réformé propagé depuis 1930 par l'Association du calendrier universel, organisation internationale qui compte une branche active au Canada. Tout en conservant la division actuelle du calendrier en 12 mois, le calendrier proposé tend à faire disparaître les irrégularités reconnues comme une source d'ennuis et de dépenses pour les hommes d'affaire, les gouvernements et pour chaque individu. D'après l'Association du calendrier universel, 79.9 p. 100 des établissements de l'Amérique du Nord recensés récemment ont affirmé que les irrégularités du calendrier ont été la cause de difficultés et de dépenses dans leurs transactions financières.

Un bon nombre de projets antérieurs de ré-

Association, an international organization with an active Canadian branch. While retaining the 12-month structure of the calendar we use now, the proposed one is designed to do away with the irregularities which are an acknowledged source of trouble and expense to business men and governments, and to every individual. According to The World Calendar Association 79.9 per cent of North American firms, recently surveyed, reported that calendar irregularities caused difficulties and expense in their businesses.

"Many of the earlier plans for calendar reform involved radical departures from the old calendar, and most of them have now dropped from sight. However, The World Calendar has been approved internationally by business, scientific and professional organizations, and by churchmen of almost all faiths. Its adoption was on the provisional agenda of the U. N. General Assembly in 1949 and while discussion was postponed then because of a crowded agenda, it is known to be widely supported by U. N. member nations.

"The proposed calendar retains the structure of our present calendar, but is uniform from year to year. Its principles are simple, and it may be written down from memory in a few moments. Every date falls always on the same day of the week, even in leap years, and the four quarters are identical in all respects. The first month of each quarter has 31 days, the other two months 30 days each, while each quarter starts on a Sunday and ends on a Saturday. Every month in the year

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forme du calendrier prévoyaient un changement radical de l'ancien calendrier; mais la plupart de ces projets se sont évanouis. Le calendrier universel cependant, a reçu l'approbation internationale d'organisations commerciales, scientifiques et professionnelles et du clergé d'à peu près toutes les croyances religieuses. Son adoption figurait à l'ordre du jour de l'Assemblée générale des Nations Unies en 1949, et bien que la discussion de ce sujet ait été rémise à plus tard à cause d'un ordre du jour trop chargé, il est manifeste que la question jouit largement de l'appui des Etats Membres des Nations Unies.

L'Association du calendrier universel souligne que le calendrier projeté conserve la structure de notre calendrier actuel, mais ne change pas d'une année à l'autre. Ses principles sont simples, et il est possible de l'écrire de mémoire en quelques instants. Chaque date tombe toujours le même jour de la semaine,—même durant les années bissextiles,—et les quatre trimestres sont identiques en tous points. Le premier mois de chaque trimestre compte 31 jours; les deux autres mois 30 jours chacun, et chaque trimestre commence un dimanche et finit un samedi. Chaque mois de l'année compte le même nombre de jours ouvrables.

L'Association explique que les complications de notre calendrier actuel découlent surtout du fait qu'une année de 52 semaines ne comprend que 364 jours, tandis que le calendrier doit inclure 365 jours dans les années ordinaires et 366 jours dans less années bissextiles. C'est à cause de ces jours supplémentaires que les dates se déplacent constamment d'une journée à l'autre de la semaine. Qu'on voit à ces jours supplémentaires et l'année s'établit de façon ordonnée à 52 semaines.

Le calendrier universel enlève la 365e journée du système régulier des dates numérotées et la place entre le 30 décembre et le ler janvier et l'appelle Journée universelle, qu'il propose comme congé universel qui serait probablement accepté par les employeurs et les travailleurs comme congé à la place du Jour de l'An. Dans les années bissextiles, un autre congé supplémentaire, appelé Jour de l'année bissextile, est inséré après le 30 juin. Alors que ces jours correspondent au 31 décembre et au 31 juin, on ne leur donne aucun des noms des jours de la semaine, et leur présence ne nuit pas à la régularité du calendrier.

D'après l'Association du calendrier universel, les employeurs et les travailleurs sont tous ennuyés par les irrégularités du calendrier qui rendent le calcul des paies, les rapports et comparaisons périodiques et les congés extrêmement compliqués. A l'heure actuelle, la plupart des congés tombent des jours différents chaque année, et quand ils surviennent au milieu de la semaine ils entraînent souvent la fermeture des établissements et des absences. Avec le calendrier universel, tous les principaux congés au Canada tomberaient le lundi, le vendredi ou en fin de semaine, et ainsi la plupart des congés feraient partie d'une longue fin de semaine.

then has the same number of working days.

"Complications in our present calendar stem mainly from the fact that a year of 52 weeks occupies only 364 days, while the calendar must accommodate a 365-day year in ordinary years and 366 days in leap years. It is these extra days which keep the dates in constant revolution through the days of the week. Deal with the extra days, and the year settles down into an orderly arrangement of 52 weeks.

"The World Calendar takes care of the 365th day by removing it from the regular system of numbered dates, placing it between 30 December and 1 January, and calling it Worldsday — proposed as a world holiday which would probably be accepted by employers and employees as a holiday in place of New Year's Day. In leap years, another extra holiday called Leapyear Day is inserted after 30 June. While these days correspond to 31 December and 31 June they are not given week-day names and their presence does not affect the regularity of the calendar.

"According to The World Calendar Association, employers and employees are all troubled by calendar irregularities, which make the calculation of pay rolls, periodic reports and comparisons, and holidays enormously complicated. At present, most holidays fall on different days each year, and when they occur in mid-week they are a frequent cause of industrial shutdowns and absenteeism. The introduction of The World Calendar would see all major Canadian holidays falling on Mondays, Fridays or on week-ends, and most holidays would thus be part of a long week-end."

Throughout Canada opinion is developing toward acceptance of the view that of all the reforms being put forward internationally, none is of more general interest than the revision of the calendar. The common-sense advantages of The World Calendar are easily seen by business men, lawyers, government officials and the like. They agree that accounts, operating schedules, pay rolls, contracts, timetables and fiscal periods would be stabilized and thereby made more convenient. Comparative statistics dealing with these matters would be the same from year to year.

Current interest in calendar reform is so great that the Canadian Chamber of Commerce recently decided to appoint a "Special Committee" to make it the subject of a study which will guide local chambers in their promotional activities.

In the minds of informed leaders, there is no doubt that the planned and perpetual system embodied in The World Calendar has a real contribution to make for more effective production and for the conserving of time, money, labor and material. Calendar reform, according to the three principal labor organizations, is not an isolated cause separated from other activities, but is a linked and real part of all productive effort. As one labor representative expressed it: "Is not time the most precious commodity we have, and is not everything we think, plan, do or say predicated on time, by means of the calendar?"

Two of the authoritative advocates of calendar reform in official Canada during the past quarter-century were the Honorable Martin Burrell, one-time Secretary of State, and G. S. Wrong, former head of the Dominion Bureau of Statistics. Both these officials were pioneers in the present-day agitation for revision, and their declarations on the subject are still quoted as background for official thinking. Mr.

Wrong's position, now generally accepted in the business world, was that "statisticians, accountants, managers and all other persons using records and statistics will most assuredly welcome a revision of the calendar which will provide accounting periods of fixed length and quality, and which will make each month identical with the corresponding month of previous years." Mr. Burrell's most frequently quoted paragraph is: "I agree with the author who says that he is opposed to standardization in many fields, but there are other fields in which standardization vastly simplifies life, and saves waste of time and effort. In any occupation we live in a network of time, and if anything should be standardized and simplified it is the measurement of time. I therefore pronounce myself a humble supporter of The World Calendar."

Canada's advocacy of calendar reform is vigorously supported by the newspapers of the Dominion. Articles featured in Ottawa, Montreal and Toronto are typical examples of editorial opinion. Says the *Ottawa Citizen:* "A report just released by the Canadian Chamber of Commerce brings out clearly the advantages of the proposed World Calendar. It provides additional evidence that in Canada business as well as labor is ready for this reform. As the Canadian Manufacturers' Association has pointed out, however, the change would have to be simultaneous in a number of countries. Canada should therefore try to have the subject placed on the agenda of the U. N. General Assembly."

A recent editorial in the *Toronto Financial Post,* which was reprinted by the *Montreal Gazette* and many other newspapers, sums up the situation as follows: "Certainly the present calendar is changeable and irregular. It is a nuisance to the ordinary man and a major tribulation to those who have to keep business records and make comparisons."

The *Toronto Globe and Mail* remarks on the economic benefits of the reform, and expresses surprise that this phase of the matter hasn't already compelled action. Just the matter of holidays is colossally expensive. The editor remarks: "Because of holidays falling on awkward weekdays, especially on Tuesday, Wednesday and Thursday, workers will lose nearly half a billion dollars in 1952."

From *Maclean's Magazine* comes the following forthright opinion: "It is time we got ourselves a new calendar. This is not, of course, a change that can be made by any one country, least of all a small nation like Canada. But *any* country could pass 'conditional' legislation, stating that The World Calendar would be adopted if a certain number of other countries did likewise . . . Canada under the guidance of Sir Sandford Fleming led the North American continent in establishing Standard Time zones. Why shouldn't we also take the first step toward rationalizing the year?" Another magazine which has featured this subject is the *New Liberty,* which said in a January, 1951, article: "The World Calendar is gaining support as each year passes."

H. S. Southam, publisher of the *Ottawa Citizen* and associated with newspapers in Hamilton, Vancouver, Calgary, Edmonton, and Winnipeg, is one of the chief Canadian advocates of calendar reform. In a statement widely circulated not long ago he said: "The new World Calendar is a genuinely fundamental reform that will be of vast benefit to mankind."

REFORM LONG OVERDUE, SAY BRITONS

By Charles D. Morris
Former Collier's Staff Correspondent in Europe

REORGANIZATION of calendar reform activities in England will in all probability follow the death on 2 May of Rear Admiral Tufton P. H. Beamish at the age of 76. From 1947 to 1949 he was head of The World Calendar Association's British Affiliate, resigning in the latter year for reasons of ill health.

The Admiral's most recent communication to The World Calendar Association headquarters in New York was a letter written only a few days before his death, discussing the latest Parliamentary attempt to revive international interest in Easter stabilization. "Calendar revision will surely come some day," he predicted, reporting his correspondence with Sir Richard Acland, Socialist M. P. who was directing the Easter Bill activities. The correspondence was notable as indicating a general agreement between Conservatives and Laborites on the desirability of calendar reform. Acland's comment was: "There is, of course, no rational argument whatever against calendar reform." Beamish's opinion was summed up in the phrase, "I am convinced that this reform is long overdue."

Admiral Beamish took up the cause of calendar revision after a long and distinguished career in the British Navy. When he was retired in the '20s, he immediately found a seat in the House of Commons and served as a Conservative leader until 1945, when he was succeeded by his son, Tufton Victor Beamish.

During his last year in Parliament he finally succeeded in bringing his favorite subject to the floor of the House of Commons for formal discussion. He introduced the debate with an adroit reference to Parliament's adoption of the Gregorian calendar in 1752.

"It is 192 years since the House of Commons had a debate on calendar reform," he said. "And I may remark in passing that it took 170 years [from the time of Pope Gregory XIII] before we decided to have that debate, so slowly do we move with regard to calendar reform.

"I feel this is a matter very relevant to our plans for reconstruction in nearly every phase of national life. Members of the House are aware of the type of calendar reform which I propose. It has been described as a balanced, regular and perpetual calendar—designed to replace the present calendar which is inconvenient, irregular and a source of expense. Its defects are many, patent and perpetual.

"May I remind the House that the calendar which we now enjoy was the result of a decree issued in the year 1582 by Pope Gregory. It is about 16 centuries since the Emperor Constantine gave us the 7-day week. The defects of the calen-

dar from which we suffer are mainly due to the clash between the 7-day week and the 52-week-plus-one-day year. The odd day makes the calendar irregular, inconvenient and inconsistent. The odd day is the cause of the anomalous and unnecessarily variable calendar—but it can be adjusted with a small measure of reason and goodwill.

"The proposal is for the odd day to be fitted in beween the 30th of December and the first of January; it would have no weekday name attached to it.

"I must mention Lord Desborough in this connection, because he raised the question in the House of Lords in 1932 and in 1936. We owe him a debt because he made a deep study of this matter, for which I personally am very grateful.

"The government should popularize and publicize this plan—circularize chambers of commerce, local authorities, trade unions, colonial representatives, banks and last, but by no means least, the British Broadcasting Corporation. Then there are the scientific societies and the accountants. In almost every phase of national life the new calendar will bring simplicity and comfort. In finance and education it will help. In statistics and business, it will be of great importance, for comparisons—instead of being odious and anomalous, which they are now—will become deductive and consistent.

"I beg the government to be enthusiastic about this. I feel confident that it will take all possible action in preparation for international agreement about this essential plan."

Admiral Beamish had the reputation in the Navy of being a zealous and capable officer, who was devoted to his profession, the interests of which he was able to champion later in Parliament. Courteous and reserved, he always spoke with a due sense of responsibility and was listened to with respect both in the House of Commons and elsewhere.

Since his retirement from the chairmanship of The World Calendar Association's British Affiliate two years ago, there has been no important organized effort in Great Britain on behalf of calendar reform. Admiral Beamish was always hopeful that his health would improve enough to enable him to seek out a successor who would carry on a work which has been pursued for more than twenty years. British leadership on behalf of an improved calendar had been notable since 1931, when an important group was organized to promote interest in The World Calendar, with the title "Parliamentary Committee on Calendar Reform."

This committee, under the chairmanship of Sir Philip W. Richardson, M. P., had in its original membership such notable names as Captain R. C. Bourne, M. P., Peter Freeman, M. P., Mrs. Leah Manning, M. P., Ralph Morley, M. P., Miss Eleanor Rathbone, M. P., Sir Cooper Rawson, M. P., C. Ernest Winterton, M. P., and Sir John J. Withers, M. P.

In its first statement to the public, the committee urged that "wherever practical men have given consideration to the defects of the present calendar, the case for a reform of some kind has appeared unanswerable." It conducted several questionnaires and an ambitious program of publicity in the press. It was represented at the calendar reform conferences of the League of Nations in the autumn of 1931, and reported that "there would seem to be now established in the leading nations of the world a nucleus of agreed secular

opinion which actively desires to see the principal defects of the Gregorian calendar removed, and which accepts the idea of a perpetual calendar."

The British Parliamentary Committee later transferred its responsibilities to the Rational Calendar Association, which had the active support of Lord Desborough, then 77 years old, internationally regarded as the pioneer of calendar reform in Great Britain. The Rational Calendar Association continued its activities until a few years ago, when it was absorbed by The World Calendar Association's British Affiliate, of which the late Admiral Beamish was the Chairman.

Current activities on behalf of calendar reform include a provocative pamphlet authored by an international lawyer, James Avery Joyce, and issued from his offices at 11 King's Bench Walk, London, in which he suggests that "our present calendar is almost exactly 2000 years out of date." His monograph provides both a simple introduction to the important topic of calendar reform and—more to the point—a carefully reasoned argument for the early adoption of The World Calendar.

The story of our calendar, the booklet relates, is the history of the human race. Unfortunately, says the preface, the rapid developments of modern science have interposed an inconvenient time-lag between the calendar in use throughout the Western world and the actual day-to-day need for a more efficient and streamlined time-keeping system.

The direct and simple language in which Mr. Joyce presents his case will probably not lead anyone to think that changing the calendar is a simple business and can take care of itself. The author urges that public action to achieve the new calendar must be two-fold: First, supporting groups in all countries should work for a clear promise of support from their own governments; and, secondly, the United Nations Assembly, with its 60 national delegations, should approve The World Calendar. "On this, as on other world issues," says Mr. Joyce, "peace is one and indivisible."

From the preface, by Professor Lancelot Hogben of Edinburgh, I quote a very pertinent summary of the British viewpoint on why the old calendar needs revision: "The chief present bother to sensible people is that no quarter, no particular month, is identical from year to year. This means that annual comparisons of production and trade, taxes, prices and wages are never accurate, without elaborate adjustments and explanations. In fact, statistical analysis, on which modern economic and social life increasingly depends for its smooth running, needs constant correction over a period of years, in view of the fact that the unit of the year is an unavoidable measure of time for public governments and private businesses alike."

Mr. Joyce pleads eloquently for the new calendar, urging Britons to "put the claims of eternity against those of time, and the values of the whole against those of the fragment." The cause of calendar reform, he argues, presents a further reason for that One-World thinking on the part of ordinary people and national leaders alike, without which no single nation can prosper, or even survive, in this Modern Age.

His appeal for adoption of The World Calendar is founded on a long experience in discussing the subject at home and abroad. Last year he lectured widely on calendar reform in America.



TIME FOR A CHANGE

THIS year the American Memorial Day, which is observed in all but five of the 48 states, fell on Wednesday and focussed attention again on the inconvenience of mid-week holidays. The *New York Daily News* made this the topic of its morning editorial, illustrated by a pertinent cartoon from the pen of Artist Henri Arnold.

"Toward today's close," said the fluent editor, "many holidayers will realize that there's been something wrong. The answer: the holiday had to come on an inconvenient Wednesday. There's nothing wicked, of course, in snatching a few hours of enjoyment on Wednesdays. But wouldn't all holidays be more sensible if they could be stretched out into three-day picnics, with no more loss of working time than is now involved in relaxing a mere 24 hours in the middle of the week?

"For one answer to that question we refer you to the proposed World Calendar. This time-measurer, plus a little shifting of some fixed national holidays, would enable us to enjoy all our major anniversaries as 72-hour affairs. It would also make business and bank bookkeeping

much more efficient; every year would begin on a Sunday and wind up on a Saturday, neat as a pin.

"This being one of those irritating, mid-week holidays, though, we're more concerned right now with the vacationing aspect.

"We all love holidays but—let's be frank—just how much good does one day do a guy? If you're planning to drive the folks anywhere you can't get far and you're certain to buck the world's fiercest traffic both out and back.

"Do you like to swim or fish or give golf or tennis a whirl? With everybody pouring out for a one-dayer you'll probably find the beaches jammed and the fish terrified by all the desperate anglers. Tennis or whatnot? If it rains you're sunk, with no hope of a better day tomorrow.

"So what chance does The World Calendar have to end all this needless holiday confusion and inefficiency? If you own one of those perpetual calendars that shows the dates for years ahead, and if you'll take a look at it, you'll discover that 1 January 1956 happens to fall on a Sunday, as The World Calendar would start every year.

"That's the logical time for a changeover from the unsatisfactory modified Gregorian time system we've been struggling with since 1752. The World Calendar Association is pleading with the United Nations to approve the new calendar by 1953 at the very latest. That's to give all UN members' legislatures plenty of time to vote their individual okays.

"We wish all concerned all possible luck."

The *Daily News* frequently devotes its New Year's editorial page to this same subject. On one such occasion it said:

"What we need is a reformed calendar—one which will keep all the best features of the Gregorian and eliminate its flaws. The World Calendar fills this prescription about as well, we think, as it could be filled. Proposed for adoption by all nations, this device keeps the familiar names for the days of the week and for the months of the year. It doesn't go in for any such stunts as the French Revolutionists tried back in 1789, when they gave months such tags as Thermidor, Brumaire, and so on, and started dating events from Year I of the Revolution.

"The proposed improvement consists in a reshuffle of dates within the framework of the old calendar. With these simple improvements, we could at least count on holidays falling on the same weekdays every year.

"Why shouldn't the United States lead the way in this reform?"

A year later it returned to the same theme:

"Where is that World Calendar—the greatest invention for time measuring since the ancient Egyptians learned how to calculate the year? It is a standard, unvarying, eternal calendar which places the same days of the week on the same days of the month now, tomorrow, next year and forever.

"It's simple and practical. Why haven't we got this wonderful new calendar? Who's keeping us from it? The answer is, nobody. Nobody but ourselves, meaning our laziness and indifference. Of course there are always some who object to any change in anything. But nobody has any valid arguments against junking our present patchwork calendar for a better. Everybody would benefit—and will, if they ever think it over."

TRANSPORTATION APPROVAL

By Jerome Schwartz

THERE has recently been a marked revival of interest among transportation executives in the subject of a reformed calendar. This was sparked, perhaps, by public statements last year from two important railroad presidents—J. B. Hill of the Louisville and Nashville, and Norman Call of the Richmond, Fredericksburg and Potomac. Both of them went straight to the State Department with a demand that the United States should actively and vigorously support action by the United Nations to put The World Calendar on its agenda for adoption at the earliest possible date.

I have found many prominent transportation executives sharing the viewpoint of Messrs. Hill and Call; namely, that an improved calendar would materially help railroads "not only in statistical comparisons, not only in the fact that month dates and holidays would always fall on fixed weekdays, but also from the broader platform of general public benefit."

Nobody knows better than the railroad man that the present calendar is irregular, clumsy, defective and a sort of hangover from a bygone age. Its unequal months and quarters and its shifting weekdays cause confusions and perplexities that touch all the processes of civilization, especially those of the business world.

"A detailed study of the various ways in which our irregular calendar affects the railroads would fill a fair-sized volume," wrote Jeremiah Welch (Assistant Secretary-Treasurer of the Chicago, Milwaukee, St. Paul and Pacific) several years ago, as chairman of a committee appointed by the Railway Treasury Officers Association to study calendar simplification. Today Mr. Welch is as firmly convinced as ever that The World Calendar would be a great boon to the railroads. "It is difficult to overstate the gains that would result in efficiency and smoothness of operations," he said to me in a personal interview. "Transportation is largely dependent on the figures of past performances. Programs for the future have past and current records for guidance. If comparability is distorted, error follows. Under our present calendar, a difference of 11 per cent exists as a minimum between a 28-day February and a 31-day March. This difference may rise to 19 per cent owing to the incidence of Sundays and holidays. Such variables overhang every calculation—whether of money, working hours, schedules or facilities."

Some time back, an editorial in *Traffic World* summarized the transportation situation as follows: "The World Calendar would greatly simplify accounting and statistical work on the railroads, as elsewhere in business. Because of the fact that its 31-day months each have five Sundays, while the 30-day months each have only four, every month would contain uniformly 26 'working days.' The year would divide

eatly into two 182-day halves and four 91-day quarters. Each year—indeed, each quarter—would be identical with all others. The wall calendar would be a perpetual alendar, so that statistical comparisons—monthly, quarterly and annual—would really nean something. Anyone who has worked over, or studied, graphs indicating such hings as revenues and carloadings, knows what ingenious artificial adjustments must e made to bring stated monthly or yearly periods into forms that may be truly omparable."

Edward F. Flynn, retired vice-president of the Great Northern, has for many ears been an active proponent of calendar reform. His writings and speeches on this ubject are familiar to most transportation executives. Mr. Flynn insists that while he railroads are progressing with the streamlining of equipment and services, they ught to get behind the proposal to streamline the calendar. On this point he said o me:

"A calendar that stays put, with every day and date the same, free from wandering olidays, will make the operation of a railroad easier. Definite plans can be made and recedents once established can be continued with slight revision. The savings will e substantial. A stable calendar will be a mighty help to railroad accounting, and cheduling, in anticipating the make-up of trains, in planning the proper allocation f rolling stock, in the efficient diversion of help. . . . If the railroads had a perpetual alendar which could be depended on, it would not be long before the records of the revious year could became the rules of thumb upon which to base the plans of the urrent year. Weather, special events and unanticipated conditions would still cause light fluctuations. But speaking broadly there would at least be a mark to shoot at. A stable calendar will give us a yardstick by which today's accomplishments and omorrow's plans can be measured."

Gordon Parrish, New York engineering consultant who made an exhaustive nvestigation of this subject among transportation executives, reported: "The results an be roughly summarized in percentage figures. For every 100 transportation fficials, about 75 are in favor of a revision of the calendar. The other 25 cannot e classified as opposed to calendar reform, because most of them merely withheld ny expression of positive opinion, on the ground that they were still too poorly nformed. It is possible to make at least this much of a generalization: the great najority of opinion is that adoption of The World Calendar would provide immediate nd lasting benefits to all forms of transportation, especially in three ways—stabiliza- ion of holidays, increased accuracy of statistical information, and simplification of ransportation schedules by synchronization of weekdays and month-dates."

Railroad statisticians were especially enthusiastic, Mr. Parrish found. "Their work eals with a mass of records, on all of which the irregularities of the present calendar ave certain detrimental effects. These records are in constant use and constitute the ackground of their labor. The most frequent calendar difficulty is that which con- erns the varying importance of different weekdays, on the evaluation of which the uccessful operation of any land transportation system is as dependent as the compass o the navigator. Despite the importance of statistical records, their use entails cum-

bersome approximations, lengthy explanations, and constant research to avoid inaccurate assumptions as a result of calendar irregularities. The statisticians are led to the inevitable conclusion that definite and important benefits—in time, money, convenience and increased accuracy of schedules and statistics—would result from calendar revision."

A New York Central vice-president, quoted by Mr. Parrish, sums up the matter as follows: "For the average railroad man the present calendar creates an accumulation of avoidable inconveniences. But the more vital case for calendar revision lies in the fact that in a highly rationalized age his business is more and more dependent upon the organized knowledge that is based on statistics. If we can take some of the unnecessary kinks and distortions out of our statistics, we ought to do it. . . . Aside from the railroad man's direct interest in these matters, he has a broader viewpoint from which he sees calendar reform as a general public benefit. He is in constant touch with the people who use his facilities, and he sees with the eyes of all his clients. He thus has a composite picture of the business man, the farmer, the traveler, the housewife, and all the others whose interests he touches and understands. The whole community is within his horizon. The world is his parish. All the benefits which will accrue to the manufacturer, the professional man, the home owner, the storekeeper and others are therefore important to him. His welfare and prosperity are part and parcel of theirs. I believe most railroad men will favor The World Calendar."

What about railroads in other countries? Canada has long taken a positive stand for a new calendar. This position is supported by both the Canadian Pacific and Canadian National Railways, and also very emphatically by the labor unions.

The French railways are among the oldest advocates of calendar revision. During the past few months they have participated wholeheartedly in a series of conferences called by the French Government to consider the desirability of calendar reform as a part of the current crusade for "standardization" in business and industry. An official statement from the French railroads gives the history of their support of this particular reform:

"In 1924, on the occasion of an inquiry undertaken by the International Association of Railroads for the League of Nations, the French railroads declared themselves favorable to a reform of the calendar. At the same time they expressed their opposition to a 13-month calendar and their support of the plan which retained a 12-month division but equalized the quarters and stabilized the weekdays.

"In 1930 the International Association repeated its inquiry and the French railroads replied that the adoption of a *perpetual* calendar of 12 months, divided into four equal quarters, presented the following advantages: (1) Quarters and half-years will be equal, and will contain an entire number of months and weeks; that is, each quarter will include 91 days, 13 weeks or 3 months. (2) Quarterly comparisons can be made without adjustments or explanations which are now necessary. (3) Changes in dates and even in length of months will be insignificant and will do no violence to time-honored customs and traditions."

In England, railroad opinion has never crystallized as sharply as in France, perhaps because until recently the British railroads were highly decentralized whereas the French *chemins de fer* were for all practical purposes a single government department. To get the English viewpoint, I talked with a highly placed official of the new government-owned British Transport, which now operates all of the country's railroads, busses, trucks and canal boats. This official is in America for a prolonged study of transportation trends. I applied for an interview as soon as I learned from the newspapers that he had arrived in New York, and after several delays I was assigned ten minutes of his busy lunch hour.

"You want to discuss calendar reform," he said crisply as I took a seat beside him at a desk covered with documents and letters. "Well, speaking personally, I've been in favor of it for twenty-odd years. And my attitude is shared by a big majority of transportation executives in my country. As far back as 1921, we investigated this subject with a comprehensive questionnaire, and found that four-fifths of all our replies wanted an improved calendar.

"That's still the opinion of British railroad men in the higher echelons. But it doesn't apply to the ranks. The great mass of transportation men are uninformed and indifferent. Few of them are aware of the deficiencies of a calendar to which they have become accustomed by a lifetime of use.

"It takes a bit of thinking to understand what's wrong with the calendar. And how are you going to make people think? They don't like to do it. . . . Simplification of the calendar is an accomplishment which is politically and economically logical, but the high value and importance of such a change in human life will not be appreciated by the mass of our people until it has been put into effect."

He paused and glanced at his wrist watch, as if he had said all that there was to say. I wasn't completely satisfied.

"What can we do about it?" I asked.

He frowned thoughtfully. "You've got to have leadership," he said. "For many years, in the late thirties, the dynamic Lord Desborough kept the subject very much alive. Since his death there's been nobody of equal calibre to whip up enthusiasm on the British front. . . . I'd like to see the railroads go after this project in a big way—perhaps they'll do it one of these days. But no single group or vested interest can impose such a reform on the world. Here is the type of benefit which must be inaugurated by the public and presented to governments with the backing of a popular demand. In railroad circles, the need for a new calendar has achieved unquestioned international standing, but it still lacks the driving force of a mobilized demand for action."

"That is undoubtedly true," I observed, "not only in England but also on the Continent and even in the United States."

Italy should be mentioned as one of the countries where transportation opinion is highly influential in official circles. In New York I found several well-informed Italians at their State Tourist Bureau on East 51st Street, and also at the offices of the Italian State Railways opposite the New York Public Library. I was referred to a

railroad representative who was completely familiar with the subject, he having recently made a study in Italy of the report by Trygve Lie, Secretary-General of the United Nations. Here, in brief, was his comment:

"There are certain obvious immediate benefits which will come from adoption of The World Calendar—the equal-quarter years, the balanced structure, the perpetual pattern, the stabilization of weekdays, the reduction of uncertainty to a minimum, and the simple method of intercalation by one yearly and one quadrennial world holiday. There are other benefits—imponderables and psychologicals—which in the long run are equally important.

"As a railroad statistician, I am most interested in getting time intervals which are more uniform and more comparable. The proposed calendar, invented originally by an Italian priest, does this admirably: each week and month and quarter will be comparable with the same time-unit in any other year, because of the introduction of Abbé Mastrofini's year day, which makes each year begin on Sunday. I believe that the most important effect of calendar revision on the science of statistics will be the development of simpler and clearer ways of presenting comparisons based on time-units, because the facts will no longer be obscured by intricate adjustments."

Transportation men throughout the world are agreed, I think, that the irregularities of the present system have certain harmful effects on their business operations. Aside from the inconveniences which affect everybody, it is the statisticians who suffer most from these defects. Time after time, monthly and quarterly statements are vitiated by the fact that the periods being compared (for example, a current month with the same month a year ago) have different numbers of working days and different patterns of weekdays. Such discrepancies make accurate deductions almost impossible. Yet modern industry is so highly organized that exact statistical information is essential.

Some governments (including regrettably the U.S. State Department) are inclined to postpone action to improve the calendar, on the ground that "the time is not yet ripe," or that the people are not ready for it. I have small patience with such excuses, which spring from laziness or inertia. So far as I can understand the lessons of history, no time has ever been "favorable" for reform of any kind. I can imagine how the Roman conservatives tried to discourage Julius Caesar when he undertook to set the world's time-measuring system in order.

The slow acceptance of the obviously meritorious Gregorian reform illustrates that worthwhile changes in this field, as in many others, require three distinct phases of action. First, there must be a plan devised which is better than the existing system; second, there must be a consistent and persistent crusade of educational work, which will teach the public and its leaders to understand and advocate the new plan; third, there must be the dynamic force of *getting it done* through national and international legislation. From the transportation viewpoint, a long step forward would be for the Association of American Railroads to make a formal study of the subject, with a mandate to approve the kind of revision that would be of the most practical benefit to the industry. Members of the Association should ask its executives to do this, and do it promptly.

HOW CONFUSED CAN YOU GET ABOUT DATES?

By Paul A. Gardner

(From an Article in Canada's New Liberty Magazine, January 1951)

ON what day of the week does your birthday fall this year? When is the 24th of May? What day is Christmas?

If you have a calendar in your hand, you can find out in a minute. But you won't always have one so handy. No calendar—and then you are in a fix. You can, of course, flounder about, doing complicated mental gymnastics and perhaps, with luck, arrive at the correct day on which a certain holiday or anniversary falls. But it's all quite ridiculous and time-wasting, don't you think, when all the kinks, all the guesswork of the calendar have been ironed out?

And they have. Just waiting for us to use it is a new calendar system that makes our calendar of today as out-dated as the buggy whip. It's called The World Calendar—a calendar that will give you the same birthday — not just date — every year; that keeps Christmas, New Year's and every other holiday on the same day of the week each year, every year.

It's ready and waiting—waiting only for the day when enough people become sufficiently interested to demand that governments make such a calendar standard.

The World Calendar makes all quarters of the year exactly even (91 days each) and every date fall on the same day of the week every year; it gives months the same number of working days, plus Sundays.

It has received the approval of prominent churchmen of all faiths and denominations (except the Seventh-Day Adventists and some Orthodox Jews) of numerous scientific and educational organizations, and of such bodies as the Federation of Chambers of Commerce of the British Empire, the Canadian Manufacturers' Association and the Canadian Retail Federation. It also has the blessing of the Chambers of Commerce or Boards



Your birthday? You know the date — but what's the day?



Holidays skip about year to year. Result: costly confusion.

of Trade in Halifax, Ottawa, Belleville and Orillia, as well as the Trades and Labor Congress of Canada; the Canadian Congress of Labor and the Canadian and Catholic Confederation of Labor and some independent unions, totalling 85.5 per cent of all organized labor in Canada. Most large Canadian newspapers and magazines have endorsed it.

Its adoption was on the United Nations' agenda in 1949. At that time, 47 nations unofficially gave it their support, not one opposed it (as compared with a League of Nations' official vote of 14 approving and 13 opposing its consideration in 1937), but a United States motion to postpone discussion of it because of a crowded agenda was carried by a close vote. Canada voted against postponement.

Its supporters didn't try to get it on the agenda last Fall because of the Korean situation. But they intend to keep right on, and they hope that the United Nations will vote it in time to start off the new uniform World Calendar in 1956, when the old one happens to start the year on Sunday, as the new calendar *always* does. This will make the change-over easy.

If The World Calendar fails to be adopted in time for that, there'll be only one reason: not enough people anxious enough to end the present confusion which makes any sort of planning ahead so complicated and subject to error. Do we want to keep these headaches or get rid of them?

Today practically all of us, except perhaps the odd hermit, use the calendar, whether we have a copy of it tacked up on the wall or not. Next to the clock, we rely on it more than any other aid. Yet, centuries ago, no one but the farmers felt the need of it, and it was for their benefit that the first calendar was charted in Egypt.

This calendar was based on the flooding and receding of the Nile, on which all their crops depended, and was the first calendar planned to renew itself every time the earth had completed its journey around the sun. It's because this takes 365 days, 5 hours, 48 minutes and 46 seconds that it's so hard to work out a calendar based on a week of *any* length. And until Pope Gregory's time, calendars were always running ahead or behind the sun over the course of a number of years.



Planning ahead involves guessing or complicated mental gymnastics.

About 45 B.C., Julius Caesar worked out a new one, very complicated and shifting. In 321 A.D. the Christian Emperor Constantine divided the year into seven-day weeks instead of just months as it had been before, and introduced Sunday.

In 1582 Pope Gregory XIII made his important contribution: a corrected leap year, which properly pinned down a bouncing day that had been throwing the calendar out of whack. In order to correct the calendar to date he had to rip 10 days out of that year, so that 15 October followed 4 October. Because of this "Papal impertinence," England (and her colonies) refused to adopt it until 170 years later.

In 1834 an Italian priest, Abbé Marco Mastrofini, worked out a way to pin down the *annual* bouncing day which still keeps our calendar the hopscotch crazy-quilt it is. But no one took him up on it till some 20 years ago.

Meanwhile, though, an English-born Canadian named Moses B. Cotsworth and the American Kodak millionaire, George Eastman, had been plugging a 13-month calendar. But this plan has now pretty well died out because 13 is a clumsy number to work with. Along with it have died 500 other "reformed" calendars, including one with four 35-day and eight 28-day months. They made their contribution, though, in arousing public interest.



Holidays will be easier to plan—falling on same day every year.



Orderliness will save business layoffs, time, worry and money.

In 1930, The World Calendar Association was formed, with Miss Elisabeth Achelis as president. I spent an hour with her recently when she paid a visit to Ottawa to talk things over with the chairman of the Canadian Affiliate, Arthur J. Hills, a tall, burly retired chief of personnel for the Canadian National Railways, now a member of the Canada Labor Relations Board, who devotes most of his spare time to The World Calendar. Miss Achelis gives her full time to spreading knowledge of The World Calendar, partly through the quarterly *Journal of Calendar Reform*.

Miss Achelis is a short, straight lady who has written an interesting book on The World Calendar (*"The Calendar for Everybody"—Putnam's*). She told me she was born in Brooklyn, and that up to 1929 "I enjoyed music and played in a trio, was interested in collecting etchings, went with my parents to opera and concerts, and played bridge. I was just a

society girl. I wasn't even very good in mathematics at school."

Then one day while vacationing in the Adirondacks, she went to hear Dr. Melvil Dewey, inventor of the filing system used now by most public libraries, speak on "How To Simplify Life." She was rather bored until he mentioned the need for taking the kinks out of the calendar. This electrified her because the calendar has always annoyed her as it does most people.

However, she didn't like the solution Dr. Dewey suggested—the 13-month calendar. Thirteen seemed to her an impossible number—clumsy, indivisible and popularly considered unlucky. She just shrugged it off though, until a few days later she read a letter in *The New York Times* by one Lewis B. Ashbaugh, who suggested a year divided into equal quarters, and months with the same number of working days each. This sounded like such a bright idea that Miss Achelis dropped everything and—being able to afford it—threw herself into learning all she could about all calendars past, present and future.

In the Fall of 1930, she and other interested persons formed The World Calendar Association, a strictly non-profit organization, and got after the League of Nations to adopt it. But by that time the League was already becoming shaky, and the 13-month calendar (". . . under which Dominion Day would have become 14 Sol. Can you imagine that?" smiled Miss Achelis) still had strong support, so nothing ever happened. Now, though, support for The World Calendar is so widespread that with just a little extra it seems possible that the United Nations will adopt it for all 60 member nations in time for a 1956 start.

Now, at the very beginning of this arti
cle, I asked on what day of the week *doe*
the 24th of May come in 1951, and whe
is Christmas? Suppose you found you
self in the position I was in when writin
this—without a calendar before you. The
you, like I, would have to go through
series of lengthy calculations before yo
could learn that 24 May will be on
Thursday and Christmas on a Tuesday.

But now let's consider another point
Since the 24th is on a Thursday, tha
means that only the very luckiest of u
will be able to enjoy a long week-end
we'll have one holiday and then have t
return to the office for a day's work befor
the week-end—and Christmas will presen
a similar frustrating problem.

It will mean, too, that New Year's Day
1952, will also be on a Tuesday. Som
plants, offices and stores will close dow
the Friday after 24 May and the Mon
days before Christmas and New Year's
Their workers in most cases will lose
day's pay each time. Other places will sta
open but their business will be disrupte
by absenteeism, since many workers wi
feel that a holiday shouldn't be maroone
in the middle of a week, and will incon
siderately tie it up with the week-end
Next year the year-end situation will b
just as bad, with Christmas and Ne
Year's Day both on Thursday.

Well, you say, how will The Worl
Calendar improve the holiday situation
The answer is, it will do wonders. Whe
it is adopted, 24 May will *always* fall on
Friday, making a long week-end easil
possible. Christmas will always be o
Monday, and New Year's always Sunday

Now that's a surprise, since most peopl
know that Christmas and New Year's fa
on the same day of the week in our pres

ent calendar. The reason why they don't in the new one is the "gimmick" in The World Calendar. Actually, it's simply the idea that Abbé Mastrofini thought of 117 years ago—pinning down that annual bouncing day.

After Saturday, the end of Christmas week, comes an extra day, called Worldsday — or W (or 31) December as a date—*before* Sunday, New Year's Day. Worldsday is a holiday for everyone (except those in essential services, who will be compensated as they are for working holidays now), and takes the place of the Monday holiday now necessitated when New Year's falls on Sunday.

Thus, with The World Calendar, those who work a five-day week will always have the same three full days off at Christmas and again at New Year's; others two full days off each time. Yet, after all these holidays, the working year still always begins on Monday.

The great advantage of this, aside from knowing exactly how to plan your holidays every year as far ahead as you like, is that it will preclude layoffs and loss of production and business, which always occur when Christmas and New Year's come on Tuesday, Wednesday, Thursday.

Edward F. Flynn, a United States economist, calculates that, under our present calendar, the workers in that country face a total loss in earnings of $461,723,328 in 1952, through isolated holidays of various kinds—holidays which don't precede or follow week-ends and therefore promote shutdowns in some establishments and absenteeism in others. And more than one expert attributed the record-breaking sales of Christmas week, 1949, largely to the fact that customers had a full week before Christmas to shop in.

Railways, planes, buses and ships, educational institutions and sports organizations also get a break from The World Calendar. A. J. Hills (who with J. Royden Gilley of Toronto and H. S. Southam of Ottawa is on The World Calendar Advisory Committee), as an ex-railwayman himself, agrees with Flynn when he says: "The railways' accounting departments will celebrate with glee the fact that they won't have to juggle figures to find out what actually happened this year, compared with last year, as to freight loadings or passenger miles traveled."

Besides that, of course, it will end the constant adjustments in time-tables and records now caused by holidays that roam all through the week.

The World Calendar will clear up the schedule headaches of educational institutions faster than any pills or powders. School openings depend on Labor Day, which will *always* fall on Monday, 4 September. Fixed Christmas and New Year's Day will help too, and when the Christian churches get together and stabilize Easter —perhaps on the second Sunday in April (World Calendar 8 April)—the final term will be easy to set as well. But The World Calendar Association does not attempt to fix Easter, which it regards as a primarily religious holiday.

As for sports, arranging league schedules is a nightmare now. For instance, Clement J. Schwener, retired barber, who makes up the National and American baseball league schedules now has to arrange dates for 1,232 games on 167 days for 16 baseball clubs, which will be fair and acceptable to all. Every team in both leagues naturally wants to play in its home town on as many Saturdays, Sundays and holidays as possible, and the problem of

working that out with a calendar that shifts around like an outfielder is colossal. The World Calendar, with fixed days and dates and holidays the same from year to year, may well save Schwener's sanity and help the managers.

Governments of course will get a break from an orderly calendar with equal quarters that always begin on Sunday and end on Saturday. This will make it easy to figure customs receipts, taxes, internal revenue collections and interest on government bonds—all of which now entail labyrinthine operations. And taxpayers will no longer find themselves stuck with paying taxes for a whole week of which they only worked—and got paid for—one or two days in that year. Sometimes this now shoves a taxpayer up into a higher bracket than he ought to be in.

As for everyday life, as Hills says, "This logical and reliable calendar offers a way for better planning and budgeting for home, social welfare, civil and church activities. Children particularly like the rhythmic arrangement of 31, 30, 30 days within every quarter year." And the kids will never mourn the loss of "Thirty days hath September, etc." which they generally get mixed up anyway.

Will The World Calendar help toward world peace? Well any worldwide movement whose aim is cooperation, not conquest, is bound to lead to friendlier understanding among peoples and nations.

In case you've been wondering about leap year, The World Calendar moves Leapyear Day on to the end of the first half-year. It becomes an extra day, another world holiday, coming after Saturday, 30 June, and dates W (or 31) June. This tidy arrangement keeps every quarter of every year starting on a Sunday—a special boon to bookkeepers and a break for everyone who needs to think ahead—as who doesn't? The year will then always contain 364 regular days—and this means *exactly* 52 weeks.

What about people born on 29 February? They'll draw a birthday every year instead of only once in four, because February has 30 days in the new calendar.

That brings up a point. Will The World Calendar face us with a clutter of new dates? No, it won't. Actually it has only four brand-new dates: 30 February, 31 April, W or 31 June (in leap years only) and W or 31 December (an old date); and one old occasional date that will now be standard: 29 February. Three months which used to have 31 days will now have only 30: March, May and August. That's all.

Yet that handful of changes does away with the 14 different kinds of years and 28 different kinds of months, all in irregular order, our present calendar bewilders us with; and gives us only one unchanging calendar year, only three kinds of months in regular order, with even quarters and perpetual day-date agreement.

But won't this become monotonous? The World Calendar Association thought of that long ago. It was, in fact, one of its objections to the 13-month calendar, with all months exactly four weeks long (besides having every 13th a Friday, and besides making it necessary to convert 337 dates from old to new!). The Association feels it has now hit a balance—orderliness without monotony. As Miss Achelis says, "The middle-of-the-road revisions are usually the ones that win through, endure and lead civilization onward to greater perfection."

Seventh-Day Adventists and some

Orthodox Jews object to The World Calendar because Worldsday interferes with what they consider the divinely-established perpetual seven-day period sequence. But research shows that this sequence was actually man-made, and that in the early days of Judaism there were 50-day periods ending in an "extra" feast day, after which the seven-day weeks began again.

John M. Firestone of the College of the City of New York's Department of Economics made a survey last year on the present calendar and its effects on business. Of 538 large U. S. and Canadian firms who replied, 79.9 per cent said "Yes" to the question: "Do irregularities in the present calendar cause any difficulties in your business?" Only 11.2 per cent answered "No."

Comments unfavorable to The World Calendar consisted chiefly in objections which could be urged far more strongly against the present calendar, and objections from those who preferred the 13-month calendar—which many firms use for business records.

Those favorable contrasted The World Calendar with "our present makeshift system" and said such things as: "This is a much-needed change in an otherwise modern economy" and "The World Calendar would be the greatest boon to business and the accountant since the first century."

The World Calendar is gaining support as each year passes. As its supporters point out, three mainstays of civilization are the clock, the compass and the calendar. Since both clock and compass have long since been completely stabilized, it would seem to be time that our calendar kept pace, instead of remaining a patch of shifting sands and jumping beans which now confuses us every time we try to think ahead a month or so.

MATHEMATICAL MAGIC

FROM the Seeman Press in Durham, North Carolina, comes an interesting new book entitled "Math Magic," by Wallace Lee, a well-known amateur magician who specializes in mathematical legerdemain. He devotes considerable space to the calendar, especially to methods of pseudo-divination whereby a performer can stand before an audience and instantly name the day of the week for any date called by anyone in the audience. This naturally leads the author into a few observations on the unnecessary irregularities of the present calendar, and thence to a brief consideration of calendar reform.

"Our present calendar," he writes, "is so out of joint that nothing fits into it. Days and dates never agree, and no year is like the past or the following year. Our calendar is an outstanding culprit and an example of discord, confusion and instability.

"When one considers that this chaotic calendar is used by supposedly intelligent nations and peoples, it is not surprising that our world today is so confused, unstable and involved in disagreement. Does not like beget like?

"To arrange the calendar on a regular plan becomes a duty and obligation. No better plan can be devised to meet all the various requirements than the proposed World Calendar, which is on a four-square pattern, as balanced as a magic square. We should all approve and heartily support this movement by The World Calendar Association for the new calendar, because, regardless of our nationality, profession or occupation, regardless of where we live or labor, the new equal-quarter calendar will bring benefits to our daily affairs."

TRADITION LINKED WITH PROGRESS

By Fr. Maximin Thibodeau, O.F.M.

Translated from "l'Almanach de Saint François, 1949," Montreal

IN a century where material progress has increasingly multiplied the means of communication between men, they have been aroused to revise and simplify the structure of their social life. They have found that one of the principal factors in intercommunication is the calendar, which regulates their measurement of time. Here is a matter which obviously can be improved. The reform proposal which we are going to discuss here is that which is promoted by The World Calendar Association. We shall describe it and point out its advantages.

But first let us say that the Catholic Church interposes no objection to the reform. The fixation of Easter makes no difficulties because the disposition of this date is of ecclesiastical origin and the Church is free to change it. Furthermore, the Church was happy to have been consulted by the League of Nations, and declared that it had no "objection to a revision of the civil calendar, which would leave to it the responsibility for the religious year." The requirement for acceptance of a new calendar is that it shall serve the general good, that it shall have a system of 12 months, that all Christendom shall agree to the Easter date, and that the interested governments formally agree to the proposal. This last condition is the only one still to be realized and its realization approaches apace, thanks to the work of The World Calendar Association.

The calendar which this Association promotes has the great merit of reconciling tradition with progress. Preserving our old calendar in its basic essentials, it modifies the irregularities to make it adaptable to modern exigencies. One has thus good ground to hope that it will be adopted by all the nations as a World Calendar, a new bond of peace and unity in a world which knows too many sources of disagreement.

When one deals with the basic question of a perfect calendar, two problems are posed, that of agreement between the civil year and the astronomical year and that of the fixity and symmetry of the framework.

The first of these problems has already been resolved to our satisfaction by the Gregorian calendar, now in universal use. In effect, by the present leap-year rule, the calendar has brought the civil year into harmony with the solar year. By this means the seasons always return on fixed dates, thus making it possible to establish at determined times the activities which follow the rhythm of the seasons. And it is this advantage which constrains

to retain the general framework of the esent calendar.

But within this framework certain anges are necessary in order to obtain s fixity and symmetry. The weeks of e year extend into those of another year. ie year commences with a Sunday, an- ner with a Monday, and so on. Let us ok at 1949. The year commenced with Saturday, the last day of the last week 1948. Its months vary from 28 to 31 ys. And if we divide the year into arters, the first has only 90 days, while e others have 91, 92 and 92 respectively. iis makes in the year two unequal half- ars, one with 181 and one with 184 ys. The new calendar proposes to rem- y this lack of symmetry. We shall see w this end is attained. One has only compare the Gregorian calendar and ne World Calendar to appreciate the gularity and orderliness of the proposed orld Calendar.

The first improvement will be that the ar always commences on the same day the week; the 1st of January will al- ays be a Sunday. To attain this it would e necessary for the year to be composed an exact number of weeks. But it con- ins 365 days, or 52 weeks plus one day. ell, let us proceed as if there were only 54 days and count 52 complete weeks. he 365th day will be placed after the st day of the last week and not be unted as one of the days of the week; it ill be a World Holiday. The same ap- ies to the 366th day in leap years and e place it after the last day of June with- ut counting it as one of the days of the eek, and it also will be a World Holiday.

Our year now would have precisely 52 eeks and would commence on a Sun- ay. But 52 is divisible by 4 and we get four groups of three months each containing 13 weeks or 91 days. Thus we have four quarters containing 13 Sundays and 78 working days, or 26 per month. To obtain this average, since the first month of each quarter necessarily contains 5 Sundays, it is necessary to give it 31 days while the others have 30 days each. We arrive thus at four equal quarters with the months containing 31, 30 and 30 days. The first month of each quarter (January, April, July and October) always commences on a Sunday; the second month of each quarter (February, May, August and November) commences on a Wednesday, and the third month (March, June, September and December) on a Friday.

So much for the civil part of the calendar. But its fixation will probably bring about the stabilization of the religious calendar by putting Easter on a fixed date. Since the other feasts of the year depend almost entirely upon Easter, the entire liturgical year will be stabilized.

What advantages would we derive from such a reform? First of all the new calendar is perpetual. Sundays, civil and religious holidays will always come on the same dates, and any given date always on the same day of the week. It is also symmetrical, as we have seen in discussing its division into equal quarters. These two features render it easy to remember and simplify its use.

Every month 26 work days, 26 wage earning days, and this does not vary any more from month to month. This also facilitates the calculations of statisticians on production, the frequency of industrial accidents, etc., by furnishing a uniform basis of calculations. Moreover, for activities occurring at regular intervals we can establish invariable dates without having

to worry about the interference of a movable holiday: payment of salaries, inventories; for the professors the opening of school, days of examination, school holidays and vacations, all can be fixed once and for all.

Even religion would benefit. The holy feasts would fall on the same dates, Lent, the Ember Days, fast days, etc. It will be easy for the faithful, because of habit, to remember them. It will be easier to follow the Mass, because they will no longer have to search through the Missal for the prayers, henceforth fixed. And for reciting the Breviary what a simplification not to have to skip from the Proper of the Saints to the Proper of the Time; not any more to have to distinguish between the weeks after Pentecost and the weeks of August; no more to consult an Ordo, henceforth fixed. The study of the liturgy is simplified and the rubrics diminished.

These are some of the advantages of the new calendar. And one should not believe that this involves an Utopian project. The reform movement, begun about 100 years ago, took on momentum after the first World War and above all has developed since the foundation of The World Calendar Association in 1930. This Association has succeeded in having its proposal (the one which we described) prevail over all the others. Actually 17 nations are plainly favorable to the proposal, and at a session in July 1947 of the Economic and Social Council of the United Nations no member government voiced opposition to the adoption of the new calendar on any 1 January which falls precisely on a Sunday.

SEND FOR THIS NEW PAMPHLET

FOR those who need a brief but comprehensive explanation of calendar reform, The World Calendar Association has just issued a compact 12-page pamphlet. It is designed for economical distribution by speakers or representatives of interested groups. The booklet bears the provocative title "Improve the Calendar: What's Wrong with It, How to Fix It."

The text strives at simplicity, being prepared as informative material for those who are uninformed on the subject. The opening paragraphs ask: "Would we consciously or willingly continue to use a slipshod system or method, which robbed us of our precious time, energy, labor and money? Certainly not. Yet with the present calendar this happens every day and every year, to every one of us, no matter what we do or where we are."

Explanation of calendar irregularities is followed by an analysis of their effects in various fields of human activity, as compared with the benefits of revision in these same fields. History of the calendar is outlined in a few sentences. "The defects in our calendar are historical. They are survivals of ancient compromises and superstitions. The calendar is 2,000 years old and is practically the same as it was when Julius Caesar installed it."

The history of calendar reform, from Mastrofini down to the recent activities of the United Nations, is covered chronologically in summary form. A suggested resolution for adoption by any interested group or organization is supplied and there is a short discussion of the stabilization of holidays. "In the old calendar, holidays jump around the week like grasshoppers. So do personal anniversaries, such as birthdays. How many people know on what weekday they were born? After the adoption of The World Calendar, birthdays will be fixed on their own weekdays. Monday's child, 'fair of face,' will always celebrate its anniversary on Monday."

MAKING LIFE A LITTLE EASIER

By Joseph Guiney

From an Address before the Holy Name Society, St. Anselm's Roman Catholic Church, Brooklyn, New York

MY aim this evening is to show that reform of the calendar can do its nare to make life a little easier, a little iore orderly, for all of us. A better calen-ar will mean a better world. But before re discuss the advantages of The World Calendar—this excellent simplification of ne orderly arrangement first presented in lear form by Abbot Marco Mastrofini at Lome in 1834—let us briefly review man's nterest in the measurement of time, and ts effect on the human race.

Just a few days ago, in a spot on the Caspian Sea—in Iran, now in the throes f a revolutionary upheaval—an Ameri-an archaeologist group found the remains f humans who lived 75,000 years ago. Beneath the layers of soil that definitely narked the successive ages of the earth's rust, in a damp cave that had served as a helter when the world was much younger, hree humans had been engulfed in a rock lide, and there they slept through the cen-uries until the diggers of today sank a haft down through the granite floor to ncover the Hotu Man and his stone tools n his final resting place.

Even long before the years when these nen existed, man trudged the earth, and is thinking was almost strictly confined o his daily struggle for continued exist-nce. The most important thought in his troubled mind was to keep alive, and nearly all of his thinking process was of the struggle for survival. This did not take as much planning as it did performance. The place where food had been obtained before seemed a natural place to seek more food, so memory became a part of the process. In the eventual routine of his own life, man noticed certain fixed re-occurrences in the world about him. The silvery mirror of the sky—the moon—came and melted away; the sun traveled its westward course; the seasons ran their gamut; the trees budded, blossomed, bloomed and came to fruition, and finally to the bitter bareness of a year's fulfill-ment. Then it started all over again. Somewhere a curious soul—perhaps the first bookkeeper—started making scratches on a wall, and from this humble and erratic start came the evolution of the measurement of time.

Down through the creaking centuries, keeping pace with the rising of the Nile, followed by the sowing and the harvest season, over four thousand years before the coming of Jesus Christ, the calendar even then had 12 months of 30 days each and five days of festivities to balance the year's length. The mathematical genius that had designed and built the great pyramids at Gizeh in the desert waste,

with geometric perfection, had no union wages or union hours to concern him. Men pulled at the blocks on rollers and, when they were sick and exhausted, they were dispatched by the sword.

In 750 B.C., the Romans had 10 months in their calendar year, but later on, when the Roman Empire dominated the world, in order to make room for the Caesars—Julius and Augustus—they switched to a 12-month year. In 45 B. C. Julius Caesar changed the year to 365¼ days. A few days ago I was examining a denarius—the Biblical coin of the Romans from that era. It is a trifle larger than a United States dime, but beautifully and sharply designed and cast, indicating that the craftsmen of that period were skilled in the arts beyond our understanding, and were well versed in calendar appreciation.

A chronicler of a later era, Denys the Little, fixed the date of A. D. 1 as the beginning of the Christian Era. Scholars insist that Christ was born in 4 B. C., but Denys had the earlier publicity, and his system stands.

In A. D. 321, Constantine made some further calendar improvements, introducing the week, but there was no other change until finally, in 1582, Pope Gregory XIII corrected the error that had been piling up through the centuries by eliminating 10 days from the calendar; Friday, 15 October, followed Thursday, 4 October, and the Spring Equinox was fixed as 21 March.

It took Great Britain 170 years (1752) to fall in line with the Gregorian calendar, with the result in American history that George Washington was born on 11 February, 1731, in the old system, but his birthday is celebrated on 22 February by the present reckoning. With the evolution of movable type, Gutenberg opened th doors to education, and the spread c printing brought information to the dar corners of the world. The physical ap pearance of the calendar came to the a tention of more people, and by it the arranged their days, planned their futur and even governed their lives.

Thus it was that in 1834, in Rome, paper appeared, written by the goo Abbot Marco Mastrofini, which laid b fore the eyes of all Italy a simple, sensib plan for a rational rearrangement of th calendar.

This is the origin of The World Cale dar as you know it, with its four equa quarters of 91 days each (13 weeks e seven days each), with the first month e 31 days, the second and third month e 30 days each; each quarter totaling 9 days and four quarters equaling 364 day An extra day is added after 30 Decembe called Worldsday—a world holiday, an in leap years a similar day is added aft 30 June, called Leapyear Day. What coul be simpler—what could be better? It perfection itself and is intended to c things for your benefit. How can it he you? Let's show you how!

You've heard of taxes? Down to th last Judgment Day folks will be grumblin about them. The 15th of March w always be on a Friday—you won't have look it up—you will know *Friday* is th day. In Queens County, Long Island, man left his home near midnight on th 15th to mail his income tax before th midnight deadline. It had to be *in* th Post Office now—he had waited too lon His car stopped for a red light and thr young boys opened the car doors and to him to move over. He argued, a shot w fired, he was dead, with the income ta

ill unmailed—and two boys went to the ectric chair.

The first of April starts the second uarter. In New York State, 15 April is tate Tax Day. This falls on a Sunday in ie new World Calendar, giving you an xtra day in which to file. Also, this gives ou a week-end to work on the tax form, r if you need extra time to raise the ioney for the payment. Every tax date n your schedule, whether a village tax, a wn tax, a school tax, will never vary, nd you can always be sure they will fall n the same date and weekday each year.

You carry *insurance*—of course. Same tuation here—on quarterly, semiannual r annual premiums.

Education? Education touches you urely. A teacher has reported regarding recent 2 January that fell on Friday. he school holidays for the Christmas acation had ended officially on Thursday, January—but not for the youngsters. n that particular Friday, 65 per cent did ot show up for classes. In New York tate, allowances and grants for school udgets are based on attendance records. hat day-off cost the school board plenty f headaches; since all the teachers and taff were present the expenses were there, ut the income owing to the absenteeism f the students was reduced.

Labor organizations have been outtanding in their support of calendar imrovement, and many have endorsed The Vorld Calendar as being beneficial to rganized labor.

Transportation schedules could be more venly balanced and provided better comort in traveling, whether on land, sea or ir, both for the general public and for ie transportation employees.

Religion, under the new calendar, can easily work out fixed feast days and stabilized holy days, once and for all. And ecclesiastical opinion, from many various groups, is on record as being heartily in favor of this vital arrangement.

Science, in its absolute perfection, welcomes with keen delight the evenly balanced quarters and dates for the exact calculations needed for scientific study.

Legal scholars will have fixed dates for court-days and assignments; legal phraseology will stop talking double talk: "the first Monday after the first Tuesday in September."

Agriculture is the largest industry in the United States. The most people are engaged in it, and it represents the greatest total dollar investment. It provides the food of the American people. The work of farming has been reduced to a science in college classes, embracing every secret hard-wrung from the soil itself, by trial and error, and by sweat and toil. The Master of the National Grange has stated that calendar reform would be of tremendous value to the farmer.

In business, we now have seven months of 31 days, four months of 30 days—and February. What a jumbled mess! The World Calendar will enable business men to compare costs, sales and figures on a more even basis. The various groups of accountants and their associations are outspoken in their hopes for this answer to their lifelong problem—statistics that mean something when compared.

At home, in the household, the lady budgeteer will find more stability in the payment of accounts, a better handling of expenses; the current outlays and those that lie ahead will be more carefully provided for, against the inevitable rainy day.

We live this hurried life of ours under

intense and continued pressure. From the cradle to the grave there is some will-of-the-wisp at our finger tips or just beyond. We strive and struggle, flare in glory for a time and pass on with only one solid and sustained objective—the saving of our soul. Eternity is a long, long time and the soul is the most precious gift of God in our daily keeping. We can damage it—even risking the loss of our salvation, by sin or bad example. We can do even worse than that: we can damage others and be responsible for their faults.

In the saving of the soul, it is also neces sary to take care of the body, and t improve the mind so that it can hel others besides ourselves. So then, in th orderly process of things, is it not logica to foster and develop an idea, originate by a Catholic priest, to improve furthe the work of Pope Gregory? We can hel to perfect the pattern of our own lives an of those about us by favoring a mo orderly World Calendar with its improve presentation of those unknown days tha lie ahead.

OBITUARY NOTE

ONE of the staunchest advocates of calendar reform in official Washington was Co gressman John Kee of Bluefield, West Virginia, who died suddenly in a committe room of the House of Representatives on 8 May 1951. After 18 years in Congress he ha risen to be chairman of the Foreign Affairs Committee of the House, a post in which H wielded a far-reaching influence on international policies and programs.

It was in 1946 that he made clear to Congress his opinion that calendar reform shoul be enacted into law at the earliest possible moment. In a half-hour speech to the Hous he said: "We are today witnessing the dawn of a new era. Men and women throughout th world are reexamining their institutions and their way of life. One of the oldest devices society is its time-table of the years, the calendar. On the face of it the calendar is simpl Among the things a child early learns is to read and use the calendar. This is as it shoul be. Were the calendar not readily understood by the least tutored as well as the mo erudite it would not serve its purpose.

"The simplicity of the calendar is deceptive. Probably nothing which has been pr duced by man represents such advanced knowledge. Fully to understand it one must engag in abstruse astronomical research involving the furthest reaches of mathematics, and th knowledge must be translated into terms of our social organization and the most element needs of human beings.

"Modern methods of production and distribution, systems of accounting and budgetin habits of work, study, play and worship, require revision of the calendar to make our tim table more convenient and useful.

"Our Government should assume a position of leadership in this improvement, whic will not only be beneficial to this Nation but will be influential internationally and helpf to humanity."

MATHEMATICS OF TIME

By Elisabeth Achelis
President of The World Calendar Association
From the Annual Mathematics Issue of "Education," Boston, April 1951

SOMEWHERE in every school program there should be a place for ic instruction in regard to the calen-. This ought to cover the history of system of time measurement and its ricate mathematical problems, which n has tried to solve, down through the es. Two years ago, when I had the asure of speaking on this subject at Baltimore Convention of the National uncil of Teachers of Mathematics, sev-l hundred delegates agreed that appre-tion of the calendar has a distinct place the background of each and every thematician.

Time measurement was primitive man's st great intellectual achievement. It nt hand in hand with the development the arts of writing, agriculture, num-ring and elementary geometry. Students d teachers should know also of the cur-nt international proposal for the revised d improved World Calendar.

Ever since man has inhabited the Earth has been fascinated by the sun, moon d the stars which so faithfully regulate days and nights. In their orderly re-rrences they challenge man. They hold n in their irresistible sway, for he can t study and obey celestial law, and work harmony with that majestic force lled Time. To adjust himself to Time, er many primitive methods and trials, man established the calendar and arranged it into days, weeks, months and years. It is generally conceded that the solar seasonal calendar was man's first organized achievement.

The 24-hour day, the shortest unit in the calendar, is the time it takes the Earth to complete its rotation on its axis. Then comes the week of seven days, originating from the Babylonians and later adopted by the Jews, who gave to the week the religious interpretation of the seventh-day Sabbath of rest. Later the week became an established calendar-unit through the edict of Constantine the Great. It is generally believed that the moon with its four phases, each of seven days, was the basis of the week. The seven known planets, which included the sun and moon in ancient days, might also have given rise to the week, a theory substantiated by the planetary names given the seven days.

It is the seven-day week which is the obstinate and difficult member of the calendar family, as it cannot be fitted into the calendar year of 365 days. The month was derived from a completed moon cycle. In early days twelve full or new moons comprised a year. The seasons, influenced by the sun, are not so clearly designated in the calendar. They are recognized by specific dates, such as 21 March, the beginning of Spring, when the sun crosses

the meridian on its northward course in the sky—the Vernal Equinox at which point the days and nights are of equal length. Then comes Summer, when the sun reaches the highest point in the heavens—known as the Summer Solstice; Autumn, when the sun recrosses the meridian point on her southward journey —known as the Autumnal Equinox, when once again the days and nights are equal in length; and Winter, when the sun reaches the lowest point in the heavens—at the Winter Solstice, after which point the sun again resumes its northward course.

The seasons are natural time-periods denoting the sun's annual course in the sky—immutable laws of nature. The solar seasonal year is composed of the number of days it takes the Earth to complete one revolution around the sun—approximately 365¼ days. This, too, is an inviolable natural law. Man, therefore, arranged the calendar as of 365 days in common years and 366 days in leap years, thereby measuring a single year in the unceasing flow of Time.

There were three distinct types of calendars in use in earliest times. Due to the comparative ease with which man could study and observe the moon, the earliest calendars devised were lunar, of which the present Mohammedan calendar is a notable example. In the moon calendar seasons are ignored. It has 12 months, alternating between 29 and 30 days in length, which causes the lunar years to be short of the seasonal solar year by about 11 days. Therefore, each month of a lunar calendar progresses through the seasons until, after 33 years have passed, it returns to its original place in relation to the seasons.

Another type was that of the luni-solar calendar used by the Jews, who, we are told, inherited it from the Sumerians. This calendar was based on the moon and had 12 lunar months. As it was short 11 days, however, it was adjusted at intervals to the seasonal year by adding an extra or intercalary month about every third year. In this manner the luni-solar calendar kept step with the seasons. The Jewish calendar inserts an extra month at the end of the 3d, 6th, 8th, 11th, 14th, 17th and 19th years within a 19-year cycle.

A third type was that of the solar seasonal calendar, developed and put into actual use by the ancient Eygptians about 4236 B.C. The Egyptians depended for their food on the behavior of the River Nile, whose annual inundation or flood was vital to the agriculturists for fertilizing the land and planting and harvesting the crops. Thus it was that the inundation or flood season became the basis of their calendar. Previous lunar calendars were abolished, and with accumulated wisdom gained through knowledge and experience a *purely solar* calendar was adopted. This marked a decidedly progressive step in the history of the calendar. The year of 365 days was established, and the 12 months, no longer associated with the moon, were each given 30 days. The last five days of the year were observed as festival days.

Many years later, about 300 B.C., the Egyptians discovered that the year was not 365 days but about a quarter-day longer. Ptolemy Euergetes and his eminent scientist, Eratosthenes, endeavored to correct the calendar by inserting an extra day every four years to take up the slack. This extra day was to be dedicated to the "Good-doing Gods." The Egyptian priests,

vever, fearful that they might lose their vious prerogative of such insertions, used to accept this *regular* leap-year. o the Romans, under Julius Caesar, ongs the credit for adopting and put- into practice the leap-year day, which Egyptians had rejected. The Julian ndar further established the solar sea- al calendar inherited from the natives he Nile. With the aid of the astron- er, Sosigenes, Julius Caesar arranged calendar on a 12-month basis but the a five feast days were distributed oughout the year. All former moon nths were discarded and each month ame approximately one-twelfth of the r. To effect this reform a long year 45 days was observed in 46 B.C. The owing year, 45 B.C., was the first with Julian calendar in actual use.

A change in the beginning of the year l been previously made in the Roman ndar. From the 25th and later the of March it became the 1st of January, ause on that date the Consuls assumed ir civic duties. This political event s so closely associated in the public nd with the first day of the civil cal- lar that the beginning of the year was arated from its scientific source. So s that today the year begins with the t day of January—a Roman heritage. The next notable change in the calendar s the introduction of the seven-day ek. Known and used by the Jews, it ame a fixed time-unit in the Julian ndar, by an edict of Constantine the at, first Christian Emperor. He also blished Sunday, the first day of the ek, as the day of praise and worship honor of the Resurrection.

For twelve centuries the Julian calendar s the time instrument for the western world, until once again it called for adjustment. As previously the Egyptians had discovered that their calendar no longer fitted the seasonal year, so Pope Gregory XIII and his astronomers discovered that their calendar was once again running away from the seasons. The Gregorian Reform was adopted in 1582, whereby only century years divisible by 400 were to be leap years, while the leap year every four years remained. Then, to align the calendar once more with the seasonal year, ten days were dropped; Thursday, 4 October, was followed by Friday, 15 October. The Spring Equinox was established on 21 March.

When England and her American colonies accepted this reform about 200 years later Americans observed a strange anomaly. George Washington, born on the 11th of February, was obliged to change his birth-date to the 22d of February. In the interim a centurial leap-year day in 1700 had been observed in England, causing 11 days to be dropped instead of the original ten.

Thus we see that the calendar is man-made. There is nothing sacred or immutable in the calendar as such, provided it conforms to certain scientific laws—a day of about 24 hours and the seasonal solar year of approximately 365¼ days. Now again a revision of the calendar is needed. Scientifically it is as accurate as man could wish, but for practical and economic purposes the shifting calendar every year (beginning each year on a different day of the week that causes changing days and dates) is a hardship which calls for improvement.

Of the proposals submitted to the former League of Nations and the many submitted to the United Nations, one calendar

plan, The World Calendar, looms above them all. It is a perpetual civil calendar of 12 months, equally divided into quarters of three months, with days and dates always in agreement. Thus there is perfect coordination among the various time-units, comparisons are easily made, and an equitable balance is attained.

In the words of Robert Bridges: "Our stability is but balance." Planning, calculations and computations are simple. The three months have their fixed number of days—31, 30, 30—and all have exactly 26 weekdays plus Sundays. To complete the year, the 365th day is added to the outgoing year following Saturday, 30 December. It is called Worldsday, inserted between two weeks and dated W December, a world holiday that may well be dedicated annually to greater world unity, cooperation, and understanding. The 366th day in leap years is added to the end of the second quarter as Leapyear Day, dated W June, another world holiday or festal day.

This inspired idea of the one or two "stabilizing" days was the concept of a Roman Catholic priest, Abbé Marco Mastrofini. He found the solution of the problem which had been the Gordian knot for untold centuries. The World Calendar has been scientifically certified as "the most exact system of time measurement that can be attained without serious dislocation or disturbance." Mathematically speaking, it is well-nigh perfect.*

Certainly the time has come to anticipate this much-needed revision. In these days of tension and crises, the saving of valuable time, effort, material, and money that this calendar will make possible, cannot be lightly disregarded. This valuable contribution to world order and world unity cannot be had on its own initiative. Like all good things, it must be worked for and earned.

A paraphrase from Hamlet is pertinent: Our Time *is* out of joint, but oh delight, That we are born *this day* to set it right!

*It follows the duodecimal system based on the number 12, so easily divided into halves, thirds and quarters.

LETTER FROM JERUSALEM

THERE are many advocates of calendar reform in the new state of Israel. Naturally, the people of Israel are acutely calendar-conscious because they live and work under dual dating standards, their official calendar being the old Jewish lunar system, while business and international affairs require a close liaison with the world's Gregorian system. A letter from Secretary-General Daniel Sher of the Israel Association for the United Nations says:

"Although I am personally much in favor of calendar reform—and I feel I am no exception in this country as elsewhere—I regret being unable to give an affirmative reply to your request [for active support of The World Calendar]. The official calendar of Israel is the traditional Jewish one, while the Gregorian calendar is used for the sake of keeping coordinated with the rest of civilized humanity—it is used, indeed, much more extensively than the Jewish calendar. In view of this fact, our Association has not felt it proper to formulate a recommendation in which this country, so to speak, has no property rights or claims. I wish you every success in your progressive task."

TIME UNITS and OBSERVANCES

From The London Times, 19 March 1951

Revision of the calendar is a complex subject, and those who seek to understand exactly what should be done to improve our present system of time measurement need a comprehensive background of the fundamentals on which a calendar is based. A special correspondent of The London Times has sought to condense this background information in a special "turnover article," published on 19 March 1951. His clear-cut and competent discussion of the subject is reprinted here for the use of teachers, lecturers and students, who will find his compact phrasing serviceable and adaptable.

WE cannot measure time. Measurement means comparing an unknown magnitude with a specimen which we keep for reference and define as the unit. e measure a length of cloth against our yardstick, or a sack of flour against a umber of weights, each of which has been found by experiment to be equal to our andard pound. But we cannot lay aside one of today's hours to measure tomorrow's orking day. The nearest we can get is to count the events that take place in time.

Certain natural phenomena repeat themselves in a way that gives us an impression regularity. We assume that one such does in fact recur at equal intervals; then we n estimate duration by counting the number of times it has been repeated.

Of all natural phenomena that which seems most regular is the motion of the eavenly bodies. The most obvious unit of time is the duration of daylight. Primive man must have soon seen that this unit, checked for instance by the distance e could walk in it, was variable; but the complete cycle of light and darkness from ne noon to the next was much more satisfactory. This interval, the day, is the first nd most natural unit of time.

But the advance of civilization cannot have gone far before man felt the need of nger natural units, and he naturally sought these also in the astronomical order. he apparent periodicity of the movement of the two great luminaries must have ade an early impression. Probably the first long unit adopted was the month, the terval between successive full moons. No doubt, dating by the lunar month sufficed r prehistoric hunters. But argricultural man needed dates related to the routine f seed-time and harvest. So he measured time by the sun, calling the cycle of change om one summer solstice to the next a "year."

Thus time can be measured on the assumption that all days are the same length, r all lunar months, or all years; and astronomy has proved that these assumptions re consistent with one another. All years contain the same number of days and so o all lunar months, or as it will be convenient to call them for distinction from

calendar months, "lunations." Unhappily, neither a year nor a lunation contains an exact number of days, nor a year an exact number of lunations. The respective lengths of the year and the lunation are, approximately, 365 days 5 hours 48 minutes 46.15 seconds and 29 days 7 hours 43 minutes 11.5 seconds.*

A simple system of dating can be based upon either the year or the lunation. An event can be defined as happening on the xth day of the year, or on the yth of the lunation, or on the yth day of the zth lunation of a set of twelve, which set we may call a lunar year. But, because the solar year and the lunation have no common measure, we shall get into great complications whenever we have to record in the one system a date that was originally fixed in the other.

The world knows one purely solar and one purely lunar calendar. One rests on the authority of the dictator Julius Caesar, the other of the prophet Mohammed.

The Julian calendar ignores the lunation entirely. Even so, the length of the year had to be adapted to the length of the day. Caesar took the true length of the year to be 365¼ days. To cope with the fraction, he let the excess accumulate and put an extra leap day into every fourth year. But his quarter of a day was, in fact, a little too much (as his astronomer Sosigenes was aware); the error mounted up, till after 1,600 years the vernal equinox had shifted from 21 March to 11 March.

Pope Gregory XIII then took the calendar in hand and, by omitting 10 days from the year 1582, restored the equinox; to minimize the error for the future he ordained that leap days should be omitted in the last year of each century, except when the date was a multiple of 400. The Catholic world promptly adopted the Gregorian calendar. Protestant countries came into line one by one, England not till 1752. The Greek communion held fast by the Julian calendar. Most States in eastern Europe, including the Soviet Union, accepted the Gregorian calendar between the wars, but the Orthodox Church still uses the Julian system.

The Mohammedan calendar has a lunar year of 12 lunations, making about 354⅓ days. Each of the 12 calendar months is a lunation, fractions of a day being avoided not by calculation, but by beginning the month when the new moon is actually observed in the sky. Obviously the year has no relation to the seasons; midsummer may fall on any date, and moves round to the same point again in about 33 years. But every Muslim anniversary falls at the same phase of the moon; Bairam, for instance, begins on the first night of the month Shauwal, which is by definition new moon. To Christians it seems a movable feast, falling 11 days earlier every year; but to Muslims Guy Fawkes Day is equally movable, falling 11 days later each year.

If we imagine the solar and lunar dates inscribed on endless scales which slide continually upon one another, all the fixed feasts in one are movable for users of

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* For their nearest approach to an absolute standard of time astronomers use observations, not of the sun, but of the fixed stars. Their "sidereal day" is the interval between transits of the meridian by the same star. By this criterion it is found that the solar day, owing to the sun's variable longitude, is not quite of uniform length, and an average, the "mean solar day," which is about four minutes longer than the sidereal day, is used for purposes of the calendar.

e other, and *vice versa*. This is the simple foundation of the distinction between the o classes of feasts.

We have imagined the short scale of the lunar year and the long scale of the lar year sliding upon one another, continuously, evenly, and without limit. Now ppose that one, the lunar, has only limited play; it is hitched by an elastic string a peg in the solar scale, which periodically jerks it back to its starting point. This the position with the ancient Jewish calendar. The Jewish months are true lunations, id feasts attached to the days of the month are *ipso facto* attached to the phases the moon. The Passover, for instance, is always the 14th of Nisan, which is always day of full moon; it is a fixed feast according to the month—but not according to e year, because the interval between successive Nisans is not always the same. For e Passover must always fall at the full moon following the vernal equinox, and thus solar control (the "elastic") has been attached to a lunar calendar. Whenever the 4th of Nisan would naturally fall before the equinox, an additional month is inserted to the year preceding it. So Nisan to Nisan is sometimes 12 months and sometimes 13.

The Christian Easter is a derivative of the Passover, and belongs like it to a mi-solar calendar. But it has been grafted upon the calendar, similar in principle ut different in form, which had been developed independently in the Greco-Roman orld. The Greek astronomers, having observed that, though both lunar and solar henomena recurred with periodic regularity, the lunar phases did not repeat themelves on the same days of the solar year, asked the question whether, by taking a nger period than a year, they could achieve simultaneous regularity in both series. bviously, if in year $n + 1$ the phase of the moon on New Year's Day was precisely ie same as on New Year's Day in the year 1, each successive set of n years will epeat the same phenomena on the corresponding dates not of the year but of the et of years. A cycle of eight years gave a rough-and-ready approximation; on this pparently was founded the calendar of the Olympic Games, celebrated at the beginning and the middle of the cycle.

A much better approximation was discovered by the Athenian astronomer Meton 1 432 B.C. He calculated that 19 solar years were equal to 235 lunations, which is early true; the actual error is only 1 hour and 29 minutes over the period. It was herefore possible to keep the months as true lunations (or nearly true—they must verage about 29½ days but some might have 29 and some 30) if 235 of them could e divided up into 19 sets. In calendars based on the Metonic cycle, therefore, 12 ears in every succession of 19 had 12 lunar months each; the other seven had 13, he extra or "embolismic" months being inserted in the series according to permanent athematical rules, and not by *ad hoc* decree as in Israel.

The Metonic cycle in a modified form is still used by the Church. To every year s allotted a "golden number," varying from 1 to 19. In years having the same olden number the Paschal full moon falls on the same day. (Owing to the slight nexactitude of Meton's fundamental equation, the error of one and a half hours in 9 years would mount up in about 308 years to a whole day, so that after every 308

years the succession of golden numbers ought to have been shifted by one. This correction was never made under the Julian calendar, and so the Paschal moon had become a paper moon, not always corresponding to the true moon in the sky. Pope Gregory, advised by the astronomer Clavius, allowed for the accumulated error when he reformed the calendar; but, reluctant to interfere with the golden numbers, which had become sacrosanct by tradition, he based future calculations, though the same in principle, upon the epact, which is the age of the moon, to the nearest day, at the beginning of the year. The table of epacts is to be slightly readjusted at appropriate intervals; the correction is always made in the last year of a century, and the next is due in 2100.)

The system of golden numbers will give in any year the date corresponding to the 14th of Nisan. Easter is not that day, but the Sunday following. So for every given day of the Paschal full moon there are seven possible dates of Easter, according to the day of the week on which the 14th of Nisan falls. Years have therefore to be classified not only by their place in the Metonic series but also by the succession in them of the days of the week, that is to say, as years beginning with a Sunday, a Monday, and so on. This is done by allotting to them one of the first seven letters of the alphabet as "dominical letter." Even this is not the end, for every fourth year differs from its fellows by being a leap year; and these are marked by changing the dominical letter after the end of February. So in fact there are $4 \times 7 \times 19$ or 532 distinguishable years.

The Church keeps both solar and luni-solar feasts. All the luni-solar observances —Lent, Ascension, Pentecost—are fixed so many days before or after Easter. The solar are either pure anniversaries—saints' days, directly attached to the secular calendar—or depend upon Christmas; Advent and Epiphany are the types.

Why is not Christmas made a luni-solar feast, movable in the solar year, like Easter? There are various lines of evidence tending to fix the date of the Crucifixion. Three or four days, separated by about six years, have their champions; Pope Pius XI felt justified in bidding the Church keep the 1900th anniversary on 3 April 1933. There is some evidence to determine the year of Our Lord's birth (which is almost certainly not that from which the conventional Christian era is calculated). But concerning the day there is no evidence whatever.

The feast does not seem to have been observed till near the end of the fourth century, when it became necessary to insist (against the Manichees) upon the reality of the physical incarnation by laying stress upon Christ's actual birth of a human mother. The date was then chosen arbitrarily, probably in order to capture 25 December from the rival religion of Mithra. The 25th of December was the conventional Roman date for the winter solstice, and the Mithraists kept it as the feast of the Unconquered Sun, when the recovery from the darkness of winter began. The Christians justified their choice by purely theological reasoning: Christ, the bringer of supernatural light, would naturally be born when the world was darkest. So Christmas is a truly solar feast, and properly kept according to the solar calendar.

EDITORIAL PARAGRAPHS

Unless governments are prepared to stand and call reason a liar, they ought to take calendar reform at once.—*Cork (Eire) ho.*

Whatever may come of the present effort, re is a persuasive ring in Mr. Joseph ab's apt suggestion "a calendar to be nembered rather than consulted." That itself would save a lot of time now spent turning the leaves looking for dates for s and that.—*Jacksonville (Fla.) Times-ion.*

Wandering holidays are caused by our tiquated calendar, unreformed for cen-ies and ill-suited to the needs of modern e.—*Ottawa Citizen.*

If the various nations can agree on calen-r reform, there may be real hope for reement on other vital affairs confronting em.—*The Houghton Line,* Philadelphia.

By all means let us have calendar reform. will save drudgery for every school child; will simplify and lessen the cost of cal-lating machines; it will relieve pressure e to uncertainty in forward planning roughout the whole community.—*Mel-urne (Australia) Age.*

We put up with our present calendar as man learns to put up with rheumatic nts—but if he could find a sure cure he uld be a fool not to take it.—*Los Angeles mes.*

Man has tinkered with the calendar for nturies. Perhaps one more repair job uld fix the critter for good.—*Pontiac Aich.) Press.*

Everything from the conduct of business the pursuit of pleasure will be easier der The World Calendar.—*Buffalo (N.Y.) urier-Express.*

With a minimum of trouble, we probably n come closer to having the calendar work for us rather than against us. There is nothing hidebound and sacred about our present system, or lack of it, that cannot be changed. We are entitled to the most workable and convenient calendar we can devise.—*Santa Barbara (Cal.) News-Press.*

So obvious are the manifold blessings of this reform that the plan merits universal approval. We'll have more fun—and do better work—when we end the costly nuisance of a haphazard calendar.—*Chelsea (Mass.) Record.*

Man has been tinkering with his calendar ever since he first climbed down out of trees and learned to throw rocks at game and spear fish. The world still needs a little calendar revision.—*Birmingham (Ala.) News.*

Well, the present calendar is a wobbly affair that doesn't make good sense, and the proposed reform is sensible and intelligent. It would be beneficial in many ways. Some day we will adopt it. And people will look back and wonder why they put up with the old one for so long.—*Bryan (Ohio) Times.*

Uniform months and quarters would save a lot of time in many lines.—*Meriden (Conn.) Journal.*

Everybody who has made even a superficial study of The World Calendar is in favor of adoption.—*Woonsocket (R. I.) Call.*

It seems odd that the Western World hasn't done anything about its cumbersome calendar since Pope Gregory's time. —*Nashville (Tenn.) Tennesseean.*

The World Calendar offers vast economic savings and is a harmonizer for all nations.—*Midland (Ont.) Free Press Herald.*

It is not understandable why more attention has not been paid to efforts to give America and the world a calendar that would be unchanged from year to year. Such a system would be a great boon to industry and business.—*Pratt (Kan.) Tribune.*

FROM THE MAIL BAG

There is no rational argument whatsoever against calendar reform.—Rt. Hon. Richard Acland, M.P., London.

As to The World Calendar, we have favored the idea and principle for a long, long time.—Dr. Dan Poling, Editor, *Christian Herald,* New York City.

Thinking of 1582, 1752, and the Russian calendar (for long very different from everyone else's), do not make the mistake of waiting for every country to adopt The World Calendar at the same moment—otherwise you will wait longer than 1956. If one or two start, the others will gradually fall into line; there may be confusion for a while—this is nothing new—as in the case of Daylight Saving and Standard times.—Dr. Robert Withington, Smith College, Northampton, Mass.

I have long followed these activities, and have great sympathy with the basic objectives of calendar reform.—Erwin D. Canham, Editor, *Christian Science Monitor,* Boston.

Here is the accountant's quarrel with the present calendar: where account must be taken of differences—often larger in significance than the absolute amount would imply—the intrusion of extraneous or random clauses of variation is a real vexation.—G. F. Wymann, Editor, *National Association of Cost Accountants Bulletin,* New York City.

There is one thing I want to commend particularly about The World Calendar. It begins the year and week with Sunday. I hate the idea of Sunday being the weekend. For Christians it is the first day, not the last, of each week.—Dr. Anson Phelps Stokes, Jr., New York City.

In spite of all the romanticism which the old time-reckoning afforded, we can be happy that we possess today an essentially better calendar, although even it is beset with some very well-known faults. In view of the recent demands for calendar reform which come every day from all sides, may we no longer delay! Since grey antiquity time measurement has gone from one mosaic stone to another. Without the work of past generations, modern civilization would not be where it is today. Contemplating this we cannot forget that the house, which is dependent upon every little stone in it, is not yet built. The well-backed calendar reform must be the crowning piece!—Professor Gerhard Schindler, Meteorologist, Bad Homburg, Germany.

Agitation for the new calendar is important. I trust your untiring efforts will soon materialize.—J. W. Gill, Stockport, England.

Supporters of a revised calendar are getting their second wind, and are trying effectively to see that this standardization is approved throughout the world.— A. E. Carpenter, Philadelphia.

Admittedly The World Calendar if universally adopted would solve all the problems encountered in connection with the Gregorian calendar except the irregular incidence of holidays.—Lawrence P. Jennings, Controller, Caterpillar Co., Peoria, Ill.

The World Calendar is a logical answer to the need for calendar reform.—Lawrence M. Levin, Editor, *Book of Popular Science,* New York City.

After the basic World Calendar is adopted, adjustments can be made to meet local conditions. This matter should be acted on by the United Nations during the present or succeeding session.—J. M. Naab, Vice-President, Leslie Co., Lyndhurst, N. J.

There is steadily increasing interest among my audiences in the subject of calendar reform.—Edward F. Reimer, Lecturer, Easton, Pa.

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nternational Astronomical Union, Commission 32
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International Labor Organization Conference, Santiago, Chile, 1936
Canadian Congress of Labour
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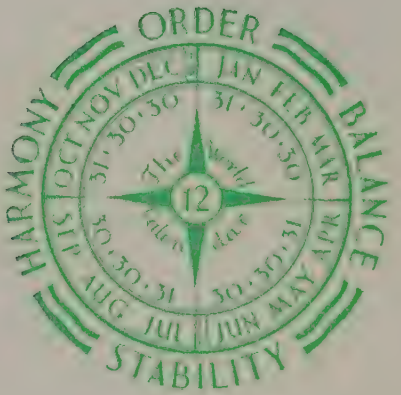
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American Industrial Bankers Association
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Inter-American Press Congress
International Affiliation of Sales and Advertising Clubs
Newspaper Advtg. Executives Assn.
Canadian Retail Federation
Controllers' Congress, National Retail Dry Goods Association
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Peoples Mandate Committee for Inter-American Peace and Cooperation

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THE WORLD CALENDAR

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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

W

3RD QUARTER

JULY						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

SEPTEMBER						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

4TH QUARTER

OCTOBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days; 13 weeks; 3 months; each quarter is repeated four times.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.

ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXI THIRD QUARTER, 1951 No. 3

IN 238 B.C., a wise and farseeing ruler, Euergetes I (Ptolemy III) of Egypt, issued a decree establishing for the first time in history a leap year. He proposed the insertion of an extra day in the solar calendar every four years, by which the seasons would cease to wander throughout the years:

"*. . . from this time onwards one day, as festival of the Good-doing Gods, shall be added every four years to the five additional days which come before the New Year, so that every man shall know that the small amount* [*of time*] *which was lacking in the arrangement of the seasons, and of the year, and in the things which passed as laws, or principle, for the knowledge of their movements, has been corrected, and that it has been supplied by the Good-doing Gods.*"

This reasonable and scientific decree failed to receive general acceptance because the priesthood was loath to abandon its prerogative of adding certain days to the calendar when needed, and the peoples feared change. Tradition and custom had become crystallized. Egypt lost a valuable opportunity to improve the solar seasonal calendar that it had inaugurated forty centuries earlier.

Two hundred years passed before Julius Caesar adopted the leap-year day into the calendar on the advice of the astronomer Sosigenes, who was well versed in the history of Egypt and knew of this ancient decree. Rome received the honor and acclaim which rightly belonged to Egypt.

Today, calendar reformers are confronted with a similar obstacle. The civil world is approving The World Calendar with the insertion of the one or two extra days—Worldsday at the end of every year and Leapyear Day in the middle of leap years. But again there are certain religious groups which protest. They object to these extra days—as interfering with

their particular belief in the *unbroken continuity* of the seven-day week that will cause wandering Sabbaths for them. This doctrine is believed to have originated with the Jews during the Babylonian captivity.

The insertion of the extra days into the calendar was first suggested in 1834 by the Roman Catholic priest, Abbé Marco Mastrofini. He had discovered the *only* scientific procedure by which the calendar could be stabilized, with every year comparable and alike, at the same time retaining the solar seasonal length of 365 and a fractional day, the period it takes the earth to complete one revolution around the sun. Thus Mastrofini successfully cut the Gordian knot of the calendar problem that has plagued civilization for centuries.

The United Nations and its member governments, with the wisdom garnered from the past, can meet the challenge and need of today, as did the Abbé in the last century, by boldly accepting an improved calendar for adoption in 1956. In this endeavor each member nation can render real service by instructing its delegates to assist and uphold this worthy cause in the United Nations.

The World Calendar is a civil reform that lies outside dogma. It is civil in purpose, universal in usage, and belongs to the world. Let us profit by the lamentable experience of Egypt and not by-pass it. Opportunity offered should not be ignored.

I AM TIME

From the Good Citizenship Calendar, Flushing, N. Y.

Without me you can do nothing.
With me you can do anything.
When you waste me, you rob yourself.
When you have me, you help yourself.
You must be either my master or my slave.
If you are my master, you can have no better servant.
If you are my slave, I'll drive you without mercy.
If I work for you, I'll pay you handsomely in achievement and in leisure, but if you work for me, you'll have little of the first, and none of the last.
I want to be your friend and servant, but you must keep pace with me, for as some one has wisely said, I wait for no man.
I am time.

Journal of

CALENDAR REFORM

SEPTEMBER 1951

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ONE MAN'S OPINION

By W. Earl Hall
Managing Editor of the Globe-Gazette, Mason City, Iowa

I HAVE a hunch that if everybody in America who believes that something ought to be done about calendar reform would take the trouble to let his voice be heard, something would be done—and in rather short order—about our antiquated system for measuring time.

When the matter was before the United Nations, the influence of the United States representatives was against taking action even though The World Calendar proposal had the formal backing of numerous other member nations. Why?

No explanation was offered by our UN representatives for their negative and unprogressive course of action at the time. But it has come to light of late, in the form of a State Department statement of policy. Quite a few words were used in the statement but it boiled down to this simple fact: "*We're waiting to hear the voice of the American people.*"

The statement followed what is referred to as "a thorough examination of the subject of calendar reform and The World Calendar." It embraced these three specific decisions:

1. The State Department will not concern itself with any possible religious aspect of calendar reform—and it doesn't need to for the reason that among nonfanatical sects no issue has been raised.

2. The Department will not take definite action toward international adoption of a new calendar without mass popular support within the United States as demonstrated and expressed through Congressional channels.

3. Despite its past negative attitude, the Department of State is "sympathetic" to the efforts on behalf of The World Calendar and approves the supporters of revision as "seeking to strengthen and improve the patterns of world understanding."

In keeping with the State Department's decision to deal with only the civil, social and economic phases of calendar reform, responsibility in this area has been reposed in James F. Green, Acting Director of the Office of United Nations Economic and Social Affairs of the Department of State.

In support of the second decision to which I've referred—the one insisting on a show of popular blessing—the State Department had this to say:

"It has been concluded that, while proposals for calendar reform have many merits, it would be extremely difficult to put such projects into effect until mass popular support within the United States has been demonstrated. The Department therefore feels it cannot devote further attention to the question of calendar reform until such widespread support has

been expressed through Congressional channels." Then there was this significant postscript:

"Should Congress take the lead in a proposal of this kind, the Department of State would feel not only that it had a mandate but also that the chances of success of international action would be more assured."

"In view," the statement concluded, "of these considerations, the Department does not feel it can take any initiative in placing calendar reform on the agenda of any international body. If other governments desire to do so, the position which any United States Delegation will take at a particular meeting will have to be determined at that time in the light of Congressional and public opinion and with regard to the views of other delegations."

And that, ladies and gentlemen, is what is commonly referred to as "laying it on the line." The State Department has taken a position highly supportable in a democracy, that in a matter as important as calendar reform, and as easily understandable, the will of the people should prevail. And that will must make itself manifest through Congressional enactment.

Some will take the position, as indeed Senator Estes Kefauver already did as recently as 26 May of this year, that the matter of calendar reform could be best expedited by our Congress if it came before Senate and House in the form of a resolution previously adopted and recommended by the United Nations.

"I feel," he asserted, "that Congress would give the matter favorable consideration if it were recommended by the United Nations."

This reasoning proceeds from the premise that calendar reform is essentially an international subject for international approval.

But the State Department, with a last word on what our representatives in UN shall do and say, takes the unqualified position that Congressional mandate must be precedent to a vote for The World Calendar in the world organization. So that's it.

The next logical time for a change-over from our present outmoded calendar to one that makes sense will be 1956. That's the first year under our present calendar that starts with a Sunday. Believers in calendar progress have no time to waste. They must swing into action. And the one best way to do this is to write a letter to their Senators and Representatives.

The people of America ought to be peculiarly conscious of the shortcomings of the antiquated Gregorian calendar at this particular time, having experienced two mid-week holidays with confusing results. Memorial Day and Independence Day both came on Wednesday. Sandwiched between weekdays, they brought a minimum of satisfaction and a maximum of inconvenience.

This was brought out in a letter I received a short time ago from Elisabeth Achelis, President of The World Calendar Association, a woman who has devoted a considerable part of her life to the cause of bringing order out of chaos in this matter of time reckoning. Let me dip into that letter:

"Split weeks are expensive. Business economists estimate a 1.5 per cent loss yearly, due to starts and stops in the even flow of production and distribution. No wonder there is agitation to place holidays on Mondays, and on their fixed dates, which can be easily accomplished.

"The underlying trouble is primarily a matter of the irregularities of our calendar. This emphasizes the importance of calendar reform, which the United Nations is seriously considering."

What's wrong with the calendar? This question Elisabeth Achelis both asks and answers in her letter.

"Every year," she notes, "shifts and is different from the preceding and following years. Weekdays and month-dates never agree in successive years; they play tag and never catch up with each other. The result is annoying confusions and costly adjustments.

"Defects in the calendar are historical. They are survivals from ancient compromises and superstitions. The calendar is 2000 years old and is practically the same as when Julius Caesar installed it, except for slight modifications by Gregory XIII.

"Its changeable pattern, its unequal months and quarters, its wandering weekdays all date back to an age when the fastest thing on wheels was a Roman chariot!"

The World Calendar has the formal approval of 17 governments. It is a simple and easy formula whereby the defects of the present calendar are remedied "without upheaval or inconvenience."

Now for a moment or so, let's take a look at the principal features of the improved method of time-reckoning which has been designated as "The World Calendar." By pointing out what's good about it, I'll be calling attention at the same time to the things that are bad about our present calendar. Here goes:

Under The World Calendar—

Every year is the same as every other year.

The quarters are equal; each quarter has exactly, 91 days, 13 weeks, 3 months; each quarter is repeated 4 times a year.

Each month has 26 weekdays, plus Sundays.

Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.

Each quarter begins on Sunday and ends on Saturday.

The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year. This 365th day is called Worldsday and dated "W" or 31 December, a year-end world holiday.

Leapyear Day is similarly added at the end of the second quarter. It is called Leapyear Day and dated "W" or 31 June, another world holiday in leap years.

In almost every particular every objection you ever had to the present calendar has been recognized and corrected. No valid argument has ever been raised against The World Calendar.

There is something highly fascinating about the study of the calendar. Its history is as complicated as the story of the human race. Its basic principles involve intricate problems of mathematics, astronomy, measurement and adjustment.

The International Date Line means that a traveler going one way has an eight-day week, but one going the other way is cramped by a six-day week.

At the North and South Poles there is no time of day. The pole is only a point, but a man standing at the pole occupies more than a point. If it is noon at his nose, it will be 6 PM at his left ear and 6 AM at his right ear, while at other points around his head he will have all the time in the world!

A little research will show that the calendar we use is far from universal. Dozens of other calendars, completely different, are found in distant parts of the world. The Moslem calendar, like the ancient Jewish calendar still used in

Palestine, is based on lunar months, and Mohammedans call this year 1370, instead of 1951. In Iran, where the bubbling oil recently made news, the year is 1329.

India has 14 different calendars; one of them, used by devout Hindus, starts its reckoning on the first day of the life of Brahma and then figures that each day of Brahma's life is equal to four billion ordinary years. India has plenty of calendar troubles, especially when a Moslem period of mourning overlaps and clashes with a Hindu period of rejoicing.

Magazines published in Yugoslavia carry four different date lines, according to the different calendars in use there. A business publication which circulates in the Near East carries six date lines.

There are similar differences in the beginning of the year. The Gregorian calendar uses 1 January; Chinese, Jewish and Moslem systems have a wandering New Year's Day; the old Romans started with 1 March, the French Republican calendar with 22 September, the ancient Egyptians with 19 July, the Greeks with 1 July and medieval Europeans with 25 December.

Our difficulties with the present calendar spring from one fundamental fact, namely, that in many respects, it is without rhyme or reason. As already pointed out, the holidays jump around from year to year like fleas on a hot stove. But that isn't all.

Do you have any idea what day of the week you were born on? I know it was on 7 April in my own case, but I haven't the slightest idea whether it was Wednesday, Saturday or Monday. That, I admit, isn't of any great importance to anybody, not even to me.

But this simple little situation points up the fact that you must do some figuring to determine what day of the week Christmas or the 4th of July is going to fall on next year. Surely if it were left to your free choice, you'd prefer a calendar with both fixed days and fixed dates.

And if you are a business man, it would mean much in convenience to have 12 months with 26 working days in each, plus Sundays. Likewise it would be extremely helpful to have quarters of uniform length, each quarter beginning on Sunday and ending on Saturday. Thus, and only thus, can you make wholly precise comparisons, one quarter with another, one year with another.

In this connection, it might interest you to know that in a recent nationwide survey, four out of five firms reported that calendar irregularities are the cause of added difficuties and extra expense in their businesses.

The complete remedy for all these difficulties is at hand. The World Calendar is all set, waiting for adoption. It should be understood that the present calendar is man-made. It has been revised many times down through the centuries. Our forebears have had the courage to act when action was needed.

The last major change was in 1752 when it was found that the Caesarian calendar had slid almost two weeks off the beam. George Washington, born on 11 February under the old calendar, was given a new birthday, 22 February.

It would shake my faith in democracy if in the face of such a golden opportunity to make their voices heard, the people of America failed to get behind The World Calendar proposal in an effective way. We shouldn't need a higher authority to make us follow the dictates of our own common sense.

TIME, MIRROR OF ETERNITY

By Angela Morgan

Time is the greatest friend the gods have given us
To ease our strains,
Achieve our nobler gains,
To shake our blankets free of fear and wrong
In the grand spaces where the winds are strong
And where the beckoning constellations cry
Courage and comfort in the unending sky.

Time is the staunch defender of our goal,
The keeper of the keys that guard the soul.
Safe in his tower shine the matchless gems—
The sacred treasures and the diadems.
Time is the Teacher infinitely wise
Who hides his riches from our youthful eyes
But flings them forth when we have grown to see
All Time is Now, and Now Eternity.
Today is yesterday, and yesterday
Our comrade as we trudge the common way.

The brief, spasmodic life we seem to know
Is not in rhythm with the cosmic flow
Of planets, stars and suns, nor does it chime
With their majestic orchestras of time.
The calmly rolling spheres
Know nothing of our fretful, tortured years.
They swing to music wider than we dare
In the blue grandeur of the atmosphere.
Time is the greatest gift the gods bequeath,
More magical than any conqueror's wreath.
We claim our crowns and kingdoms, when we see
Time is the mirror of Eternity.

Angela Morgan's deft verses were inspired by a poem in lighter vein by Robert Francis:

The Mouse whose name is Time is out of sound and sight.
He nibbles at the day and nibbles at the night.
He nibbles at the summer till all of it is gone.
He nibbles at the seashore. He nibbles at the moon.
Yet no man not a seer, no woman not a sibyl
Can ever ever hear or see him nibble, nibble.
And whence or how he comes and how or where he goes
Nobody dead remembers, nobody living knows.

TIME FOR ACTION, SAYS FRANCE

By Abbé Chauve-Bertrand

(Abstract from the French by Alice B. Connolly)

In France, the Government has undertaken an ambitious program of national betterment, through the official organization known as AFNOR (Association Française de Normalisation). The aim is "aggressive improvement of methods and procedures in any direction that promises greater efficiency, economy and productivity." One of the subjects quickly selected for consideration was calendar reform, which is being studied by a formidable special committee including representatives of all leading departments of the national life. The committee publishes this article in its official organ, Courrier de la Normalisation (March-April 1951). The French text, profusely illustrated, may be obtained on request from AFNOR headquarters, 23, Rue Notre-Dame-des-Victoires, Paris, 2.

INTRODUCTORY NOTE by the Editorial Staff of AFNOR.—Our calendar is a metronome which ticks off the rhythm of our daily life. Its imperfections and irregularities bring some disturbing factors into our whole pattern of activity. And these disturbances are more and more keenly felt in an era of scientific precision, when the products of the machine age have added greatly to our comfort and well-being. . . . Improvement of the calendar, having been earnestly studied for many years, can hardly be longer delayed. For the good of all men, the time for action has arrived. In France, this situation has been officially recognized in the appointment of the calendar reform committee of AFNOR, with representatives of all government departments, industries and scientific organizations, under the presidency of M. Albert Caquot. . . . The committee's investigations are now in progress, and one of its best-qualified members, Abbé Chauve-Bertrand, has been assigned to present a blueprint of the whole problem as it has unfolded in the deliberations of the past few months.

THE WORLD moves step by step toward its goal of world unity. Unification of the international system of weights and measures is such a step; so is the collaboration of railroads and aviation lines, the Universal Postal Union, the boundless field of radio, the United Nations and its far-flung subsidiaries. Is it not true that all these diverse influences demand, in logic and practice, along with a super-Parliament and a federation of European peoples, a calendar which would be universal also? Yes, they call for such a calendar, on an improved and perfected basis—because our present calendar is under attack as outmoded and inefficient.

The question of improving the calendar and removing its irregularities has been intensively studied for more than half a century. Our scientific organizations, our

universities, our chambers of commerce and our great international associations have participated in these studies and have recommended a change. In France, our new Association for Normalisation (AFNOR) has directed special attention to the subject by designating an *ad hoc* committee to deal with it. Plenary sessions of the committee were held in Paris on 15 March, 23 November, 1 March and are continuing.

In beginning its deliberations, the committee felt that a sound initial procedure would be to review the origins of the calendar and trace briefly its evolution. The calendar is almost as old as thinking humanity. Primitive man first used as a time measure the succession of days and nights; for longer periods he found the phases of the moon convenient. This was the basis for the calendars of the nomad shepherds, the astronomer priests of ancient Egypt and Chaldea, the magi of Persia and their ziggurat observatories. Their systems were at first elementary, then more exact and scientific; but they were tied to the moon. All the calendars of pre-history were lunar.

As time marched on, men observed the recurring seasons. For the practical purposes of daily life, these annual rhythms were highly important—winter and summer, the rainy season, seedtime and harvest, the budding of flowers, the maturing of fruits, the falling of the leaves in autumn. Here was a puzzle and a dilemma: None of these phenomena recurred in a period which corresponded with a complete number of lunations; the lunar calendar was a poor method of recording or predicting them. For dealing with these matters, then, the painstaking observers learned to rely on the appearance of certain stars. Thus men came to a recognition of the solar year, the normal and logical unit for most human activities. But people generally did not immediately abandon the lunations; in quite human fashion they tried to blend the old with the new; they compromised by counting the solar year as 12 lunar months—plus a fractional part of a month, which they adjusted by adding an extra or thirteenth month every two or three years.

It was many centuries before the inconvenience and absurdity of this system was recognized. At long last, people became aware that the lunar and solar systems could not live together. Ancient Athens and Rome suffered under the confusions of this ill-matched marriage. Their astronomers and mathematicians sought in vain to reconcile the pair by means of intricate cycles.

More cleverly, the priestly scholars of Egypt went to the root of the matter. They saw that the months, as a convenient sub-unit of the year, could be unleashed from any direct connection with the moon. So they took 12 months of 30 days each, then added five intercalary days to make a solar year of 365 days. That was good enough for their immediate purposes, although they knew it was a quarter of a day too short.

When Rome became the predominant nation of the world, Julius Caesar adopted the Egyptian calendar, with a few belated improvements. He added a leap-year day every four years, and installed his new calendar in all the far-flung provinces of the Roman Empire; thus it had world acceptance and became the basis for the system of time measurement which is still in use, practically everywhere.

In spite of Caesar's leap-year innovation, there was still a slight error; his year

was a few minutes too long. This trifling inexactitude amounted to an extra day in 128 years; by the time 15 centuries had rolled around, the spring equinox was falling on 11 March instead of the 25th. Mathematicians of the Middle Ages measured this error with surprising precision and suggested ways of remedying it, but nothing was done until Pope Gregory XIII at the beginning of his pontificate assembled a commission of scientists and scholars for this purpose. After prolonged discussion they recommended a method of correction, which was duly communicated to governments and princes. With their approval, the Pope promulgated the reform, which consisted of dropping ten days from the calendar and proceeding thenceforward with a revised leap-year rule designed to keep the calendar properly harnessed to the sun. The ingenious new rule provided that three leap years in every 400 years would be omitted, the omission to take place in centurial years whose first two digits are not divisible by 4; thus the years 1700, 1800 and 1900 were common years, while 1600 and 2000 are leap years. The resulting adjustment is so simple and convenient, that it has ever since been praised and applauded by astronomers, mathematicians, and scientists.

Gregory's recommendation was promptly adopted by Italy, France, Austria, Poland and some smaller states; a century or so later it was accepted by the Northern European nations, including England; but not until the twentieth century did it get full approval in Bulgaria, Yugoslavia, Greece, Turkey, Roumania and China. In other words, a rather easy and obviously useful reform of the calendar took 300 years to get universal adoption by all the civilized countries of the world. Such is the effect of human inertia, operating in the field of calendar reform. Yet patient tenacity always triumphs if it is supporting a true and worthy idea—in spite of ignorance, superstition and stubbornness. This is the everlasting fact which today encourages and sustains all those who feel that the time has come to improve and perfect the Gregorian calendar.

The present-day movement for revision dates back more than a century. It started at Rome in 1834, when an Italian priest, Abbé Mastrofini, published a monograph recommending a reform of the calendar which would make it perpetual—the same arrangement of days and dates year after year. His book had the ecclesiastical support of two Imprimaturs, and was widely circulated.

Nothing much happened, however, until 1884 when the great French scientist Flammarion, editor of the authoritative review *l'Astronomie*, organized a distinguished competition, with substantial prizes for the best six plans for correcting the calendar. His contest stirred up wide international interest, and the prize-winning proposals were discussed in every corner of the globe for a generation afterward. Since that time, calendar reform has been a live issue, with its original scientific, academic and religious supporters augmented by practical men of industry, politics and business. During the first half of the twentieth century the "Question of the Calendar" has been repeatedly the subject of international discussion in an ever-broadening horizon. International gatherings of Chambers of Commerce took it up at Prague in 1908, at London in 1910, at Boston in 1912, at Paris in 1914, and

again in 1921, 1925, 1929, etc. The International Association of Academies gave it formal recognition and approval at Petrograd in 1913, and in 1914 there was held at Liège, upon the initiative of M. Armand Baar (Vice President of the International Chamber of Commerce) a world congress especially devoted to this problem. The Swiss Government was preparing to address a diplomatic communication—practically a draft treaty—to all governments when World War I broke out and halted all progress toward the enactment of calendar reform.

Interest, however, was quickly reawakened in 1919 when the French astronomer Deslandres persuaded the International Astronomical Union to act vigorously through a special commission. The parent body at its Rome Congress in 1922 took up the work of the Liège Congress and laid the authoritative foundations for a project which the League of Nations (whose prestige was then very great) took under its wing, submitting its recommendations in 1923 to all nations of the world, and also to the topmost authorities of all important religious groups. This was the situation which existed when Miss Elisabeth Achelis founded The World Calendar Association in 1930, to facilitate the work of the League of Nations by gradually organizing national committees in every important country. Thirty of these national committees are now engaged in promoting calendar reform.

After this long period of preparation, the League of Nations followed with an extensive inquiry among all interested groups. Then, about the beginning of 1937, at the request of the International Labor Office and upon the motion of the delegate from Chile, a precise plan was addressed to all Member and non-Member States of the League. The result was:

14 governments accepted the proposal of Chile
9 abstained from voting
9 were not ready to express a definite opinion
7 thought the proposals "premature"
6 voted against the Chilean proposal.

The nations not represented at Geneva, or those which had withdrawn from the League—Germany, Italy and Japan—did not reply.

Then came 1939, and the Second World War. Once more calendar reform was laid aside. The League of Nations faded into oblivion.

But in due time it was replaced by a new organization, the United Nations. The subject of calendar reform, which had made so much progress in international councils, could not long remain dormant. It was officially revived in Europe by the French, through resolutions introduced in the French Parliament by the distinguished Councilor Gabriel Ferrier (1948) and his colleague M. Gatuing (1949), urging the United Nations to act. Two years earlier Peru had put calendar reform on the regular program of the U. N. Studies of the problem were made by the Secretariat, and an elaborate report was submitted to member nations by Trygve Lie. A formal vote on the subject was expected in September, 1949, on the basis of a resolution offered by the Republic of Panama. But the Agenda Committee, in a tie vote, kept it off the

floor, owing to the pressures of the international situation and other urgent business. The vote in the Agenda Committee was four for bringing calendar reform immediately to the floor of the Assembly, four against, four abstentions and two absentees.

That is where calendar reform now stands, as far as international legislation is concerned.

Defects of Present Calendar

I now turn to a list of the defects and irregularities of our present calendar. Some of them are more important than others. Most supporters of a revision will be content to remedy only the more important ones.

The minor ones should nevertheless be listed here, if only to make our record complete. Such as:

1. The Christian Era, as we observe it, is subject to some criticism. It does not correspond exactly with the date of Christ's birth. Astronomers say it does not go back far enough for many of their calculations; therefore they use the Julian period and a series of numbered Julian days in many of their tabulations.

2. The Gregorian rule for intercalating the leap-year days is not completely accurate. But the slight error here will not accumulate into a full day for about 3000 years, and no useful purpose would be served by changing it at this time—especially as it is so remarkably simple and convenient.

3. Many scholars object to the names of the last four months—September, October, November and December, whose inconsistency with their numerical order has occasionally been the cause of historical errors. These scholars suggest that, for dating documents and correspondence, people ought to use the Roman numerals, from I to XII, and this is already being done in all or almost all of the postal offices in the city of Paris.

4. The arbitrary character of the beginning of the year has been frequently criticized, even as far back as Plutarch, who wrote: "The most reasonable time to begin the year is the winter solstice, when the sun ceasing its outward course begins to return and takes again its way toward us, increasing the time of daylight and diminishing that of darkness." Most scientists agree with Plutarch, at least theoretically. It is known that Julius Caesar wanted to place his 1 January on the solstice day, which was then the 25th of December, but he was afraid that this change would irritate his countrymen, and perhaps jeopardize the other features of his reform. At the Astronomical Congress of 1922, M. Bigourdan declared: "It would be more scientific to advance the beginning of the year by ten days, in order to have it coincide with the winter solstice," and the League of Nations acknowledged that "an undeniable advantage" would come from this correction. Nevertheless the League ruled against it, because it would cause "useless confusion." . . . A chief obstacle in the way of such a change is a lack of agreement as to how it should be done—whether by dropping ten days, all at once, or by omitting the intercalated leap-year day ten times in succession.

5. Stabilization of Easter and other religious days. While this is by no means a

minor matter—in fact it is regarded as highly important in England, France, Canada and several other Christian countries—it is listed here, because it is a matter for legislation by the religious authorities. It is not part of the civil reform of the calendar, and, of course, it is of limited international interest, being of no consequence to the non-Christian countries of Asia and North Africa. It will suffice our purposes, then, to content ourselves with expressing the wish that Easter be stabilized in the new stabilized calendar. (The British Government, of course, has already officially put itself on record as approving Easter stabilization, through the Easter Act of 1928.)

6. At this point it may be well, also, to dispose of the discarded project for a 13-month calendar. It had a considerable following at one time, but practical business men soon brought to light the fallacy of its illusory attractiveness. The need for dividing the year into halves and quarters is extremely important, declared M. Armand Baar, who represented the International Chamber of Commerce at Liége in 1914, and the number 13 is indivisible. Eventually the 13-month plan was abandoned, and it has not been seriously considered in many years.

The major defects of our calendar then are: (1) The continual discord between the weekdays and the dates of the month, and (2) the incongruity of the length of months and the inequality of quarters and half-years. These are the irregularities which calendar reform proposes to correct.

Discord between Weekdays and Month-Dates. Everyone understands that at present, when the year begins on Sunday, the following year starts on Monday (or Tuesday if the preceding year was a leap year). All the month-dates that follow are similarly displaced and cannot be exactly compared with the same dates in the preceding year. All statistics and figures that people want to review, total or compare are thus rendered inaccurate. Many unnecessary annoyances flow out of this situation. In France, most fairs and markets are set according to a month-date, such as the 10th, 15th or 20th. When these dates occur on Sunday or on the date of some major religious holiday, there is trouble. Conflicting dates are constantly occurring. Local markets get shifted from their regular dates, and visitors arrive at the wrong time. Schools have great difficulties with the wandering calendar, and waste countless hours trying to avoid and evade them. A great number of educational organizations flooded the League of Nations with enthusiastic appeals for calendar stabilization.

Correcting the Length of Months, Half-Years and Quarters. This is accomplished by grouping the months in threes. The first month of each quarter would have 31 days and the two others 30 days each. Thus every quarter becomes identical, with 91 days and 13 complete weeks. Every quarter begins on Sunday and ends on Saturday.

Four times 91 days gives a total of 364 days; there remains a 365th day to complete the solar year (and, of course, a 366th day in leap years). This 365th day is placed, naturally, at the end of the year. The Leapyear Day is placed at the end of the first half-year. By making these days intercalary holidays, the calendar is stabilized.

It is true that there have been some minor religious objectors to the principle

of these stabilizing days, on the ground that they will break the absolute continuity of the Christian Sabbath. These objectors clamor that the week is of divine origin, or at least that such an ancient and venerable institution must not be disturbed. My reply to such statements is that, according to science and history, the week is derived from the phases of the moon, just as the months are derived from the complete lunations. The origin of the week can be traced to the Sumerians, in Lower Chaldea, who tried weeks of various lengths—nine days, eight days and seven days, finally settling on the 7-day period as most convenient. The weeks, like the months, were unhooked from their connection with the moon in order to make a more convenient time-measuring system. My authority for these statements is extensive. For instance: Blondel's *History of the Roman Calendar*, Father Durand's *Studies*, Camille Flammarion's *Popular Astronomy*, Hervé Faye's *Origin of the World*, Bigourdan's *Babylonian Calendar*, and the works of Father Dhorme, Arago, Bailly, Montucla, Laplace, etc. Speaking historically, the problem of the stabilization of the weeks is similar to that which was solved with regard to the months when people abandoned their moon calendars and decided to adopt the solar year. As M. Deslandres said at the Rome Congress in 1922, "there can be no substantial reform of the calendar without the stabilization of the weeks."

A few lonely voices have been heard, urging that calendar reform be confined to merely adjusting the length of months, without stabilizing the weekdays. As M. Bigourdan pointed out, this is hardly worth the bother; and it certainly leaves the calendar in a highly unsatisfactory situation. From the time of the 1922 declaration of the International Astronomical Union, all advocates of calendar reform have sought to determine "the fundamental basis of a calendar which would be as perfect as possible, without undue inconvenience or useless annoyance in the changeover period."

Any study of the subject shows that calendar reform has made steady and consistent progress during the past 30 years. The supporters of revision grow constantly in numbers and influence. Their opponents are mainly disciples of inertia and ultra-conservatism, who rely only on the weak assertion that "we have been well served by this old calendar up to now; even with its defects, supposing it has them, can't we continue with it?" To which the obvious reply is that people could also continue to travel by horse-drawn carriages rather than by automobiles, railroads and airplanes; they could continue to get their light from candles and oil lamps rather than from electric bulbs and tubes.

Mankind has always loved progress. Given the choice, people prefer the best. Here then is the best in time measurement—the improved calendar.

We are living in grave times, when everything is being improved and renewed. With all our powers we seek progress, alike in the fields of science, economics, social and religious life. The outmoded calendar must necessarily be included in any program of world renovation. It is wise and sound to adapt this ancient institution to the needs of modern life.

There are many precedents for seeking improvements in matters which affect our design for living, however ancient and venerable they may be. Tradition is an excellent

sentiment, but it must frequently yield to progress. We hold fast to that which is good; we renounce nothing of our heritage that is right and perfect; but we do not let the dead hand of the past hamper the future. Such were the principles on which Julius Caesar and Pope Gregory acted when they made their valuable contributions to calendar reform; such are the principles on which we must act today. May I close with this admonition from one of the most eminent authorities of the Catholic Church —"it is necessary always to go forward."

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OBITUARY NOTES

ERLAND ECHLIN, Toronto advertising executive, died on 31 August. For nearly twenty years he had maintained an active interest in internationally promoting the cause of calendar reform. During much of this time he was traveling in Europe as a journalist and broadcaster, and his influence on behalf of The World Calendar made itself felt throughout the Continent and in the British Isles. He lectured on this subject at the League of Nations and in Berlin, while serving as a European correspondent for *Time, Newsweek, Maclean's Magazine,* Columbia Broadcasting and various Canadian and American newspapers. He died in Buffalo of coronary occlusion while on a vacation visit to relatives in the United States.

WADE POSTON, real estate and tax expert of Cranford, New Jersey, died on 26 July, at the age of 71. As an active leader in municipal government and welfare, he was much impressed by the potential importance of calendar reform, and contributed an article on this subject to the *Journal of Calendar Reform* in 1947.

D. ALLYN GARBER, editor of the *Department Store Economist,* died in New York City on 9 August, at the age of 61. He had been an active supporter of The World Calendar for many years, both in the columns of his influential publication and through his many important personal contacts. He was a vice-president of the Chilton Company, which has printed the *Journal of Calendar Reform* since it started publication in 1931.

OUR HARMONIOUS NEW CALENDAR

By Elisabeth Achelis

AS President of The World Calendar Association, I receive inquiries relating to religion and calendar reform. People ask: "How will The World Calendar affect my Church?"* Some of them, with broader vision, wonder how the new calendar can be truly universal and apply equally well to Christian nations and to the even larger populations of countries which are predominantly Moslem, Buddhist, Confucian, etc. They also ask: "What about the religious groups which profess a belief in an unbroken series of seven-day weeks?"

In answering these questions, one is faced with the fact that modern calendar reform is currently recognized in international forums, such as the United Nations and the International Chamber of Commerce, solely as a civil matter. Any religious aspect of the subject is not within the jurisdiction of civil bodies. It would be presumptuous for them to assume that they could deal with the observance of holy days by Christians, Jews, Mohammedans or the followers of other prevailing religions in various parts of Africa and Asia. The reverse is equally true for the various religions to interfere in a matter that is basically scientific and civil.

Modern calendar reform—The World Calendar—is time's representative, and, like time itself, it is universal and belongs to the whole world. No single group can claim it, possess it or restrict it.

In the past, this was not so. The calendar was considered as belonging to the Egyptians, the Jews, the Romans or the Vatican. It was given a label and so it belonged to this or that particular group. Today this no longer applies. Like the principle of democracy, the calendar rests in the hands of all peoples and nations; it is no longer, as in former centuries, under the direction of a ruler, a potentate, or dictator. From the hands of a few, it now belongs to the many.

To prevent calendar reform from becoming lost in a labyrinth of voices and a welter of ideas, certain fundamental principles keep it on the straight road of progress toward the attainment of its goal.

Fundamental to all human existence on earth and everything that pertains to life is the recognition of the Creator, Who made heaven and earth and breathed into man

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*This question is answered for most of the people in the Christian world. In the case of the Universal Christian Council for Life and Work (predecessor of the World Council of Churches), a world federation of non-Roman Churches embracing all major Orthodox and Protestant bodies, it suffices to say that after five years of study and survey, it gave overwhelming endorsement to The World Calendar. The Roman Catholic Church has clearly stated that there is no dogmatic objection to calendar change. In the United States, the Protestant Episcopal Church, the Council of Bishops of the Methodist Church, the American Lutheran Church and other Churches have approved it.

His breath of life. This principle is basic and motivates, consciously or unconsciously, the everyday lives, thoughts and acts of nations, governments and peoples.

Together with this basic principle is another, that life expresses itself in a twofold manner; such as the religious and the civil, spiritual and material, man and woman, capital and labor, day and night, hot and cold. When these dual and complementary forces balance each other all is well; everything functions harmoniously with well-being and security. "Our stability is but balance."

When, however, harmony and balance are lost through pressure from one side or another for superiority, domination or power, then conflict results with its attending trouble, difficulty, suffering, and sense of insecurity. To maintain harmony and balance should be man's unending goal toward which his thoughts and talents should be continuously directed.

A notable example of the balance between the religious and the civil is found in calendar reform. The calendar is based on celestial movements of the sun, moon and stars, which in turn produce days, months, seasons and years. These scientific divisions of time are further augmented with the week and with a religious day of rest, instituted only after man came to inhabit the earth.

The calendar based on the seasons was a scientific discovery of great moment—man's first important intellectual discovery, which the early priests used to designate days of worship.

The principle of duality imposes on man the necessity of developing a calendar that is harmonious in its function for his religious and civil life. In the degree that both harmony and balance are maintained, depend in great measure the progress and development of a more perfect calendar. To accomplish this it is essential that the calendar be built on an impartial and scientific pattern in accordance with astronomical law.

The *scientific* nature of the civil calendar is apparent in its set-up of days, weeks, months, quarter-years (approximating the seasons) and the year itself, all based on the movements of the sun, moon and stars. The Egyptians were the first to adopt the solar seasonal year and their calendar was later improved by Julius Caesar. The Egyptian and the Julian calendars were the forerunners of the present Gregorian, which is a solar seasonal calendar based on the scientific 365 days and a fraction that it takes the earth to complete its annual journey around the sun.

In *Webster's International Dictionary* the definition of the calendar is: "a system of fixing the beginning, length, and divisions of the civil year; an orderly arrangement of divisions of time as years, months, weeks and days, adapted to the purposes of civil life."

It is logical and in keeping with this definition that any contemplated change in the civil calendar must be legislated by the civil authorities, through the various governments and peoples of the world. Particularly is this the case with the United Nations.

Here is an important international organization, composed of 60 nations, which is the only international body that can uphold and work for so world-wide an objec-

tive as calendar reform, on the generally accepted plan—The World Calendar. Upon its action will depend in great measure the progress of The World Calendar, and by its action in this matter will the world-wide prestige of the United Nations be strengthened or weakened, enhanced or diminished.

The *religious* aspects of the calendar revolve around holy days and festivals, and the various days of worship among the different religions of many nations and peoples. As religion is composed of numerous sects and beliefs, a uniformity among them is difficult to obtain and the need for balance and harmony becomes all the more urgent. Calendar reform—The World Calendar—means not only a Christian calendar, nor is it Jewish, Mohammedan or Buddhist; it belongs to all the religions of the world. Thus the regulation of holy days, such as Easter or Yom Kippur or the holy month of Ramadan or other days of worship, lies in the realm of the various religious authorities.

Should an erroneous belief become current that the calendar is only religious or the reverse, difficulties and rivalry between the two complementary forces might easily develop, because the proper balance between the two will have been lost. Man cannot break the eternal law of balance without injurious consequences. This is a fundamental principle that was fully recognized by Jesus in His familiar words: Render unto Caesar . . . render unto God. . . .

This principle of balance as expressed in the dual nature of the calendar received full support in a statement issued from the Vatican in 1912 which stated: "The Holy See declared that it made no objection but invited the civil powers to enter into an accord on the reform of the civil calendar, after which it would willingly grant its collaboration in so far as the matter affected religious feasts." In an agreement issued from the League of Nations during the early years of its study of calendar reform, three branches of Christianity—Roman Catholic, Eastern Orthodox and Protestant Anglican—officially declared that no dogmatic issue is involved.

The aim of the calendar reform movement is to recognize the balance between these two forces, civil and religious, and also to obtain balance and harmony among the various time-units of which the calendar is composed. Only in this manner will the calendar best serve man in his time-reckoning.

The need for balance and harmony was not fully understood in the past, so that conflict and confusion often prevailed in the older calendars.

It was a procedure of doubtful value when the ancient pagan ruler of Rome, Numa Pompilius, placed the calendar in the hands of a newly formed religious group, a priestly college of ancient Rome, of which the head was Pontifex Maximus. Science was submerged and with the years the calendar fell into a state of utter confusion. Centuries later, Julius Caesar, as Pontifex Maximus, succeeded in putting the calendar once more on a scientific basis whereby a certain harmony and balance were re-established. He achieved this goal through wisely calling to his aid an eminent astronomer, Sosigenes.

Still under the name of religion, Pope Gregory XIII in his reform enlisted the aid of two scientists, Aloysius Lilius a learned astronomer and physician, and Christo-

pher Clavius a Jesuit mathematician, who based the Gregorian calendar on scientific grounds, by proposing a new leap-year rule conforming to the correct length of the solar seasonal year. In this change, ten days were dropped from the calendar with the loss of two Saturdays and two Sundays. The year of reform, 1582, had but 50 instead of 52 Saturdays and Sundays. The weeks remained unaltered in their sequences, Thursday, 4 October, was followed by Friday, 15 October, but the even regular flow of dates was broken. The new leap-year rule established the observance of festivals or holy days within the seasons in which they belonged. The Christian feast of Easter was given its regular Sunday after the first full moon had made its appearance on or after the spring equinox. All this was excellent; the civil and the religious complemented each other.

It was the Abbe Mastrofini, mathematician and philosopher of the early nineteenth century, who proposed a perpetual calendar based on a year of 364 days with the necessary 365th day inserted as the last day of the year and considered a "feria octava"—an eighth day. In this manner the years would retain their astronomical length of days. The Abbe gave to the proposed new calendar its regular 52 weeks and every new year began with the 1st of January, a Sunday. In the religious field it followed that immovable festivals and holy days would be stabilized as to their days and dates.

This new plan of a 364-day year is the principle of The World Calendar, whereby the year is accurately divisible into equal quarters. Each of the various time-units receives equality. Within each quarter-year the 91 days, 13 weeks or 3 months, approximating a season, coordinate perfectly. Weeks are not specialized above the months, nor are the months or days of greater significance than the quarter-year divisions. No time-unit is exaggerated in value, all receive a square deal in this new civil and scientific calendar.

To complete every year with the necessary 365th day and every leap year with the quadrennial 366th day, essential in keeping the calendar every year in step with the seasons, the extra 365th day "*Worldsday*" is added as the concluding day of the old year. Here is the "balancing" day that makes every year comparable. The leap-year day is added every four years at the end of the second quarter as "*Leapyear Day.*" These extra or special days, the new world holidays, are dedicated to good will, amity and peace, and are non-working days. They have been likened to a rainbow bridge of many colors whereon peoples of all climes, nationalities, customs and faiths are joined in a common spirit of fellowship and understanding.

The modern idea of the Abbe is a revival of one of the oldest known calendars. It is not at all unlikely that as the Abbe belonged to a religious order and was a philosopher, being well versed in the Old Testament, he rediscovered the ancient Palestinian calendar, and based his plan upon it, especially in regard to the extra day. It is thus of particular interest to Christians and Jews that his idea conforms with the earliest calendar mentioned in the Bible (Leviticus 23: 15, 16).

This earliest calendar was based on the pentecontad or 50-day cycle. Each cycle had a series of seven weeks of seven days each, which contained seven Sabbaths. After

the 49th day, which was the seventh Sabbath, a 50th day was added as a special offering to the Lord. Then a new pentecontad cycle began. Here, then, was a periodically inserted extra day (or eighth day) that ignored the doctrine of "unbroken weeks," because that particular doctrine was not then in existence. This calendar, it is believed, was in general use throughout ancient Israel before and during the time of Moses. The story of the Flood with its twice mentioned 150 days (three pentecontads) is regarded by scholars as indicating a prolonged use of the 50-day cycle.

It was during the Hebrews' captivity in Babylon that their religious leaders became alarmed at the danger of assimilation of their people by their Babylonian captors. To check this danger, they emphasized their Sabbath Day worship on a newly formulated doctrine of a *continuously unbroken* seven-day week, in the hope that this would solidify them against assimilation. Thus was inaugurated the theory of a continuous series of unbroken weeks. It was man-made rather than divine. The week was overstressed and an unbalanced condition was created among the different time-units. The new theory had entwined itself around the Sabbath.

By this method the ancient 50th day or special day of each pentecontad calendar was suppressed. The new doctrine was not adopted without opposition and authorities tell us that even as late as the second century B.C. the uninterrupted succession of the weeks with the Sabbaths, although accepted, was still a matter of discussion and controversy.

Could it be that this doctrine, along with other traditions and rituals, caused Jesus to raise His voice in indignation when He declared that the elders had set up a tradition of men, and worshipped it more than the commandment of God (Mark 7: 5-13)? Jesus also declared "the Sabbath was made for man and not man for the Sabbath." Even a brief survey shows that the belief in an unbroken succession of weeks is not as ancient as some people seem to think. To those who uphold this doctrine it is obvious that with a perpetual calendar established their Sabbaths will wander through the week, which will cause them religious and economic inconveniences, the result of unbalance that invariably brings with it troublesome and harmful disturbances.

The overemphasis of the week is still with us. But most of the Christians, Jews, Mohammedans, and the vast nations of Oriental peoples do not attach any such high religious significance to the week. A recent pamphlet published by the Chinese Association for the United Nations contains a statement that: "The Chinese do not think much of the week" and a proposal has been made by them that "we shall have no more of the week."

The scientific origin of the week is found in the approximate seven days of each of the four phases of the moon. Historians associate it also with the seven planets known to the ancient Babylonians and Chaldeans. In The World Calendar the familiar order of the week is retained; the first day of the week is Sunday and the seventh day is Saturday.

It is significant to note that when Standard Time was proposed, studied and adopted in 1884, the tradition of the unbroken succession of weeks was not invoked.

Yet this modern method of counting clocktime throughout the world continually breaks the succession of the seven-day week when at the International Date Line a six or eight-day week is experienced. The ancient doctrine did not interfere then, why should it interfere in calendar reform today?

In the spirit of democracy and fair play, objectors to The World Calendar have the right to express their opinions freely. It is hardly to be expected that followers of the theory of unbroken succession of weeks will easily change their attitude. However, it is equally in the spirit of democracy and fair play that the advocates of The World Calendar keep true to their convictions, and that nations, governments and peoples be not intimidated but march forward with full confidence in the right.

Time is precious and opportunity offered should be acted upon. The day is here and now to approve The World Calendar, through the United Nations toward adoption Sunday, 1 January 1956, when once again both the old and the new calendars agree.

The new civil World Calendar is scientific in structure, world-wide in purpose, harmonious and balanced in its time-units. It begins every year on Sunday, the 1st of January, and ends every year with the new Worldsday, a world holiday, a special day for greater world unity. It is a calendar wherein all religions can observe their days of worship in accordance with their various beliefs—such as Friday, Saturday or Sunday. The civil-scientific and the religious functions of the calendar are reconciled in mutual tribute and acknowledgment of the Creator without Whom nothing is. By complementing the two, the civil and the religious, The World Calendar offers the very best calender with all conditions considered for the greater good of humanity.

> Take the words Harmony and Balance as your keys. They are magical keys and will open doors through which you may pass into new life and power.—Nancy Fullwood.

> Time that "takes survey of all the world" should itself be one and the same for all the world.—The New York Times.

> In times of crisis we must avoid both ignorant change and ignorant opposition to change.—John Stuart Mill.

> Everything living develops and changes; we must be continually abandoning something of the past in exchange for something better in the future; the most ancient and venerable of traditional institutions must themselves be modified from time to time; and more than once people have regretted that reforms did not come about when they were first desired.—Abbe Chauve-Bertrand.

ACTIVE PUBLIC OPINION SHOULD DEMAND REFORM

By Dr. Bhola D. Panth

One of the most informative and interesting books on the calendar is Dr. Panth's "Consider the Calendar," published by Columbia University in 1944. It points out most emphatically that "in modern life the calendar is an important and essential instrument by which we arrange our activities from day to day, or from season to season. . . . No matter what the enterprise or undertaking, whether in the interests of personal living or business achievement, or in the social and economic planning . . . we cannot help considering the calendar. It is always with us, helping or dictating, as the case may be. And our present calendar is a lingering medieval instrument, operating in a highly advanced and synchronized technological society."

IN a functioning democracy, no *dictatorial* changes are required or desired. A change necessarily comes when the people are convinced of its desirability. Once an informed public has given its mandate, the change is made, and only the technical details and administration are matters for experts. In our present world, changes in the calendar will be made only when a democratically active and informed public opinion demands them.

Our calendar is a product of the cross-fertilization of many cultures and ages and represents a concentrate of certain experiences of the race. It was not divinely ordained, nor was it created by some benevolent extra-human dictator. It grew out of human needs and assumed new forms with man's increasing experience and expanding knowledge. It is compounded of the influences of renaissance, reformation and revolutions, not only of recent years, but from immemorial times.

There is nothing sacrosanct about the calendar, nor does it possess any infallibility. It is primarily an instrument devised by man to serve him rather than to enslave him. Our lives, relationships and enterprises are beneficially organized or injuriously disorganized by the efficiencies or inefficiencies latent in its operational characteristics. Our calendar has been amended, revised and overhauled, time and again, through the short history of two millenniums.

Current demand for further revision is supported by governmental, business, social, educational, ecclesiastical, scientific and labor groups. This demand is greatly

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Editor's Note: Educated as an engineer in India, Bhola Panth came to America in 1941 for post-graduate studies at Columbia. His desire was to train himself for teaching the engineering sciences, because he felt this was one of India's greatest needs. In the scholastic atmosphere of Morningside Heights, his attention gradually focused on the calendar, and he chose this subject for the thesis which won him the degree of Doctor of Education. He is now back in India, where he occupies a responsible post with the Nehru government.

accentuated by the development of the power and air age; the increasing exchange of raw materials and finished goods has been made possible by speedy transportation, the sharp rise in international intercourse, and the consequent rapid transit of ideas through electric communication.

The same international exigency that brought about the adoption of the Hindu numerical notation transmitted to Europe by the Arabs, almost world-wide adoption of the Gregorian calendar, recognition of the metric system in the scientific world, the universal acceptance of the Greenwich meridian and the international date line and the adoption of standard time, is beginning to force revision of the calendar. Before World War II, the demand for calendar revision was supported by representatives of fifty different countries.

Few would insist upon the use of an old-time watch if an up-to-date chronometer were accessible. The calendar needs to be brought into line with our best scientific knowledge of time. This has been done in the past, as when Pope Gregory reformed the Julian calendar. The Julian calendar was like an old clock running faster than astronomical time. Now we need to tidy up the Gregorian system. When an old timepiece is no longer accurate or adequate, we replace it with a better one as soon as we can afford it.

The scientific attitude and the scientific method need not be restricted to the laboratory. They should be extended and applied to everyday life. Democracy will be nurtured directly in proportion to the degree in which its adherents apply scientific methods to everyday life. A practical knowledge of the scientific method is the crying need of good citizenship.

Scientific objectivity, combined with humanitarianism, provides excellent techniques to help us solve our social problems. In a democracy, as in science, debates, analyses, tests and criticism are not only desirable but indispensable. One of the most distinguishing features of a democracy is its willingness and ability to face the ugly sore spots, to lance and clip them from the body politic, and to stop their infection and contagion. It is this characteristic which, if utilized, enables a democracy not only to survive a crisis but even to emerge from it invigorated.

Thus in a democracy it is the privilege and duty of each citizen to study matters relating to the general welfare and then to exercise his rights of suffrage. Unless every citizen weighs the facts, analyzes the situation, and passes his judgment through his vote, democracy will not function to its full capacity. The critical judgment of the citizen needs to be implemented by a corresponding action. "Thought that does not end in action," Romain Rolland observed, "is an abortion and treachery."

The idea of improving the reckoning of time was inherent in the first time-concepts of our prehistoric ancestors and can be considered to be as old as the very first calendar. In each stage of civilization, changes have resulted from the shifting needs of dominant groups. So long as the calendar remained an instrument of exclusive control and ownership, its structure and constitution were arbitrarily interpreted, amended and revised by kings, dictators, pharaohs, priests, popes, pundits and pontifices, to suit their whims and interests, and nobody objected. However, once

the calendar came to be widely used by the populace as a vital instrument related to everyday life, even potentates had to reckon with public opinion before effecting change.

With expanding democratic horizons and correspondingly contracting authoritarianism, and with the use of the calendar becoming more universal, *further changes in it will come in response to public demands.* Because the great majority of mankind is made up of farmers and workers whose lives are intertwined in the daily march of the calendar, changes will be brought about only when the masses of the people are convinced of their validity and necessity. Change will not come by the mere fiat of some dignitary, as in past ages, nor by the writing of learned treatises.

Change has been the unchanging rule in nature, as it is in human affairs—in the arts, sciences, cultures, politics, folkways, and the calendar. The calendar is an instrument conceived from the very beginning to serve human needs and to bring about the adjustments demanded by new knowledge.

The history of scientific measurement is replete with examples where false or only approximate methods have been repeatedly replaced by more exact ones. This holds true of our calendar too. Indeed, it is an instrument that has seen a minimum of mutation; nevertheless it *has* been changed within the last two millenniums by Julius and Augustus Caesar and by Pope Gregory XIII.

We know how men, inhabiting the same earth, exposed to the same sun, finally were compelled by the necessities of common interests to construct a common calendar. In an inter-related world, made more intimate by global commerce and war, the need for a *monolithic calendar* becomes increasingly pressing. In reality the United Nations from China to the United States, by and large, follow the same calendar, as they do standard time.

We have seen how man extracted knowledge from nature—his environment at large—and adapted it to his needs. By crude and refined experimentation with his gleanings from investigation of the world around him, his knowledge eventually effected a change in him and in his society. This constant interaction brought about modifications, not only in man's skills, tools and techniques, but also in his social theories and practices. Nor did this progressive change and interaction imply impermanence or destruction of the society which man had evolved. Rather a flexible society which is responsive to the exigencies of the commonweal and predicated by man's increasing knowledge of himself and his world will be more stable and permanent than a rigid and static society.

In the realm of human relationships, discontent and imagination are the parents of change; democratic instrumentalities provide the channels through which discontent can be transformed into creative activities. Thus democracy offers a framework within which scientific principles can be applied to human relations. Democratic institutions supply facilities for adequate adjustment in the interest of the general welfare.

Today the calendar is considered indispensable by peoples and their governments the world over, in the exigencies of world planning, and for the liberation of

all peoples from economic, social, racial and political oppression. We look to a world of tomorrow, peacefully operated by and for common men who will be working and planning together for a democratic globe. Unless the old timepiece is replaced, we shall be using an obsolete and inefficient instrument for projecting our twentieth century global plans.

It would seem logical, therefore, to suppose that in a world rapidly contracting in space and time, animated by common aspirations, linked by common ties, marching toward common goals, our aims might be realized more speedily if we were to perfect our tools, instruments and techniques to conform to our present knowledge.

One of these is our calendar. It needs to be simplified and standardized. I am reminded of an eloquent paragraph of Nehru's: "The past brings us many gifts: indeed, all that we have today of culture, civilization, science or knowledge. We acknowledge our obligation to the past. But the past does not exhaust our duty or obligation. We owe a duty to the future also, perhaps even greater than the one we owe to the past. For the past is passed and done with, we cannot change it; the future is yet to come, and perhaps we may be able to shape it a little."

With advancing technology and rapid transportation, with almost instantaneous communication, and with the increasing pressure of military needs, man has become more plan-conscious and more time-conscious than ever before. Almost everywhere in the world, natural and human resources are being marshaled to conform to highly developed plans. War, or defense, is especially utilizing superlative techniques, tools and talents, and is synchronizing them to obtain optimum results. In the face of such a highly developed instrumentality as a twentieth-century war plan or defense plan, is it not ironical that the instrument through which the plan is made operative should be based on a medieval and singularly erratic calendar?

Our system of time reckoning has evolved through day and night, moon and sun, seasons and their changes. From a study of these natural phenomena we obtained our concepts of lunar, luni-solar and solar calendars. Thus our present calendar is a patchwork in which are encrusted the whimsies of kings and dictators, the superstitions and myths of past ages, the dogmas of priests, the folklore of the people, and the astronomical knowledge of diverse cultures. It carries within it a chronicle of constant change.

In contemporary life, commerce and industry are so highly organized, and communication and transportation have moved with such rapidity in linking the world that our calendar, even though reformed less than 400 years ago, has become quite troublesome to use, because it is not keeping step with either our knowledge or our social needs.

Though there has been little fundamental change in the calendar since Julius Caesar, the twentieth-century interrelations of industry, commerce, transportation, trade and time have given it a thoroughly international character. Consequently the improvement of the calendar is now a matter of international importance to the informed people of the world.

HOLIDAY CONFUSIONS IN CANADA

By E. S. Echlin

When Victoria the Good, great queen of England, graciously permitted her loyal subjects in Canada to celebrate her birthday by a national holiday, she never dreamed that an unbalanced calendar would conflict with her high intentions, and result in confusions and frustrations that would frequently make her holiday not an occasion of joyous family reunions but of dissatisfaction and disappointment. Mr. Echlin, who died a few days after completing this article, was a Canadian writer and advertising executive whose support of The World Calendar covered a period of nearly twenty years. *See Page 112.*

CANADA has only two big national festivals of her own each year, days celebrated by all our people from coast-to-coast. The other eight holidays are held in common with one or more other nations and emphasize variously the significance of Easter, the importance of labor, civic affairs, and the traditional meanings of Christmas, Thanksgiving and the New Year.

The great days which belong exclusively to Canada are Victoria Day, celebrated 24 May in honor of her late Majesty Queen Victoria, and "Dominion" Day, 1 July, which commemorates the confederation of Canada into a self-governing nation in 1867. I put "Dominion" in quotation marks because the word, as part of Canada's title, was discarded officially late in 1949—but so far no new name has been coined to replace it.

To Canadians, Victoria Day has a special importance of its own. First proclaimed for the Golden Jubilee of the Queen's reign in 1887, it was a singular mark of affection and loyalty from the subjects of her big "Dominion Beyond the Seas." The Queen was deeply loved by her overseas subjects; her achievement was one of character—she was a symbol of private virtue and public honor, of devotion to duty as wife, mother and ruler. If the two best things in life are hard work and a happy family, Victoria presented a shining example of both. Canada then was at a great distance from the United Kingdom. Republicanism was seeping into ships of state captained by monarchs, and Canada lived cheek by jowl with the most successful of all republics. Victoria Day seemed in the circumstances to be more than a mere holiday. It was a tribute and a pledge—it implied solid adherence to the Throne.

And for all Canadians, whatever their ancestral stock, the big holiday on the 24th of May was to become an outstanding event. The first full bloom that heralds summer is on the land. The weather invariably is salubrious—suggesting of itself camping, picnics, opening the summer cottage, fitting screens and awnings and all the final tasks in preparation for the bountiful season which lies immediately ahead.

So it was in this present year. Fathers planned on Victoria Day, well knowing it to be the traditional deadline for work around the house which properly belongs

to Spring, or before. Mothers made arrangements for visitors, home parties, outings and fireworks. When April ended and its leaf was discarded from the calendar, it was then discovered with some dismay that Victoria Day fell on a Thursday.

This should have caused no particular surprise, really, because all fixed-date holidays occur during the middle of the week in at least three years out of every seven. But even after a lifetime of experience, people still seem to be reluctant to check days and dates on a calendar they know to be tricky. More than ever now the situation has been radically changed by the wide adoption of the five-day-week ending Friday night. Single-day midweek holidays naturally are far less popular than those which come on Friday, Saturday, Sunday or Monday.

For the treatment of 1951's awkward Thursday 24 May, no leadership came from official quarters because Victoria Day is a fixed, legal occasion. Therefore it was left to each individual, family, corporation* and other organization—without legal obligation to the event—to decide for themselves when the holiday should be celebrated.

The result was chaos. All government offices, schools, libraries, civic bodies and banks observed the legally appointed date. Retail stores, which except in deep summer remain open Saturdays, did the same. But from that point on it was anybody's day. Businesses which closed Saturdays decided to celebrate the 24th on the 25th, in order to give employees a longer week-end. For the same reason, companies which normally were open Saturdays put off the holiday until the 26th of the month. There was no co-ordination nor were decisions made until the last minute. Many firms which kept to the proper date found their suppliers and customers at home when they reopened for business on the 25th. And vice versa.

Transportation, always the biggest holiday feature, was given double trouble on top of its normal jam-packed grief. Departure tickets, good ordinarily until midnight of Victoria Day, had to be extended hurriedly for another 24 hours. Trains, planes and busses had to be on hand for heavy outbound traffic for two days instead of one. Shipments of freight piled up for a big after-holiday haul stayed piled up—the particular trucking company handling the goods was celebrating the Queen's birthday one day late.

In the home, frustration rather than chaos was the rule. On the 24th, some of the family were off work and some were at work. On the 25th, the play was repeated. Friends who had planned to spend the day together reckoned without the calendar—and the independent decisions of unconnected executives. Boarding houses, rooming houses and hotels worked both days in order to satisfy the holiday's confusing demands.

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* In modern industry, split weeks are a costly extravagance. Business economists estimate a 1.5 per cent loss yearly, due to starts and stops in the even flow of production and distribution. No wonder there is agitation among industrial and labor leaders to place holidays on Monday and on their fixed dates. Midweek layoffs bring a minimum of satisfaction and a maximum of inconvenience. The underlying trouble, of course, is our irregular calendar. Its changeable pattern, its unequal months and quarters, its wandering weekdays all date back to an age when the fastest thing on wheels was a Roman chariot.

At our own house, we had planned our usual Victoria Day drive to Niagara Falls —a pleasant ride from Toronto through the so-called "Garden of Canada." Meantime, our daughter took a summer job with the government. She had to observe Victoria Day's legal date, 24 May. In my advertising firm I agreed that it seemed more practical and sensible to work on the holiday in order to make the next day the beginning of a long week-end. The result was that we were celebrating on different days and our trip to Niagara Falls was off.

From my office window on Victoria Day, as I looked over the "open" and "closed" premises of downtown Toronto, I hoped that the confusion and the remedy might register themselves in the right quarters. I reflected that a few relatively small changes would give us The World Calendar and end forever the frustrating nonsense of hit-and-miss, unsatisfactory holiday dates. As it happens, Victoria Day, 24 May, in The World Calendar falls on the fourth Friday of the month—an ideal combination of date and day. And for all the rest of foreseeable time. It seemed to give real point to our experiences in Canada this year with Victoria Day.

However, the situation is not lost on our legislators. J. L. MacDougall, Member of the House of Commons, our federal parliament, has a bill underway which proposes to authorize celebration of Victoria Day—and Dominion Day—on the nearest Monday following the date. Dozens of professional, commercial and other organizations now are being canvassed with good success to secure their support of this measure.

This appears to be a step in the right direction but it is not, of course, the answer to the problem of dates and days. Taking a long range view, it may establish an unwise precedent. The same type of independent action is seen in bodies like some U.S. Government departments and in the Czechoslovakian economic service which last year adopted curious "accounting calendars." These are said to be for greater convenience and for internal use only—but they are calendars which will put the users a week or more out of step with the rest of the world before the next decade has passed.

All such unilateral action piles confusion on confusion. Nor is it good for the mental stability of peoples. Disrespect is engendered and encouraged for both worthwhile tradition and the law which confirms commemorative dates. It is a trend, perhaps, of the times—but history does not report kindly on such trends.

The real answer to the millions of problems created everywhere by our disorderly calendar is as plain as the daylight around us. The carefully planned and tested World Calendar of 12 months, with equal quarters and unvarying days and dates is a cornerstone in the structure of universal unity. It is so simple and will be brought about with so little change that after its introduction humanity will cry —as it so often does about great advances—"Why have we not had this before now?"

Four short years ahead lies the most convenient date, Sunday, 1 January 1956, to begin a new and balanced calendar life. This great step forward in human progress is bound to be reflected in the harmony and balance of all the years ahead. I have no doubt whatsoever that this harmony and balance, in turn, will exercise a beneficent influence on the conduct of mankind's affairs for all time to come.

LAGGARD CALENDAR of LAGGARD MINDS

By Walter Locke
Editor of the Dayton (Ohio) Daily News

TOMATOES ripen and roasting ears are in the pot. The wheat is in the bin. The early goldenrod predicts the fall. Men wonder: the new cars will soon be out. Wouldn't they better be rid of the old one and buy the new and better one?

Or will the next year's models be a little better still? Maybe better wait! In automobiles, nothing but the latest, newest, best will do. So too with radio, television, washing machine, tractor, lawnmower, shaving machine. Out with the old! In with the new! With clothes, only the latest cuts will do. Our houses: forty years ago colonial; then the English cottage; now build at your peril anything but the "ranch."

In machines we are on our toes, contented only with the latest, most nearly perfect, best.

Not so in matters of the *mind* such as calendars, our way of keeping track of the days, months, years.

We have one brain for the things of our hands. This brain, in America, is alert, exacting. It is ready for new ideas, change. This brain has brought us in a century from the one-hoss shay to the automobile and flying machine; from the sickle to the thresher-harvester; from the candle to the electric glare.

The calendar? It stands as Julius Caesar left it 2000 years ago.

For the calendar (and forms of government and weights and measures and various other things of the mind) we keep another, a totally different brain,—a standstill brain. (If the two are idea-tight compartments of one common brain, the result is all the same.)

This brain hates change. It yearns to be standing still. Behold the boulder in the field! Nothing short of an earthquake can persuade it to change its place. So this brain of ours.

Two horses are hitched to one cart. One dances forward, full of rushing energy. The other holds back, bent on standing still. What a pulling back and forth, with little progress for and much wrenching and wrecking of the cart!

Our automobile brain hurries onward, rebuilding rapidly the economic order in which we live. Our calendar brain, our oxcart brain, holds back the political and social order in which the economic machine must move.

The two brains, like the two horses, pull against each other, a vast confusion, a great waste. Our slower brain of the calendar makes what the scholars call a "time-lag" between our physical and our social world. It gets our life askew.

Julius Caesar in ailing Rome faced a crisis in the calendar. Nature provides in the movement of the earth around the sun a measure of the year. The Romans had made their calendar so stupidly, the work

of this second brain of theirs, that in Caesar's time January, meant for mid-winter, was arriving in the fall.

Caesar used his army to overthrow the government. We scold him for that. What would we expect to happen to a country with no more sense than to let its January drift back to the time of ripening walnuts and pumpkins yellowing on the vine?

The Romans needed a guardian. Caesar took the job, even as some Caesar will do to us if we manage no better than the Romans did.

The Roman calendar, with four surplus days in the year, even got into politics. It was a crisis and Julius Caesar faced it determinedly. He remade the calendar. He did so well that, though he made his year 10 minutes or so too long, his calendar, with a little changing by Pope Gregory XIII, is with us still.

This old calendar, with its leap year now and then, served well enough till the age of science. It is a nuisance, an obstacle to progress now. The work of men, as life now goes, runs by statistics. What we did this month is measured by what we accomplished in the month before. With the months ranging in length from 28 days to 31, how can they be compared? Our holidays wander through the days of the week, making the weeks incomparable. The incidence of our Sundays upsets our finer calculations of days, weeks and years. The calendar is a ball and chain impeding our laboring legs.

Till November, 1883, there were as many times of the day in America as there were men in America. Time being measured by the sun, the time at no two places was the same. At 6 o'clock at the west end of Brooklyn bridge it was five seconds past 6 at the other end. The west side of Chicago was a minute slower than the time at Lake Michigan. Wherever any man stood with his eye upon the sun, that was his standard time. In such a time-chaos railroads could not run. Had the change to standard time been left to Congress it would doubtless, men's second mind being as it is, be debating it this day.

It happened the railroads simply could not wait on Congress for our slow minds' consent. By private agreement they put forth our time zones, gave us standard time. They were the Julius Caesar, giving us standard time.

There could be a calendar of four equal quarters, each month with 26 weekdays, each holiday falling, year after year, on the same day of the week, a perfect calendar.

Must our slow minds keep us waiting for this needed change till our own man on horseback, our Julius Caesar, comes?

This lag between time and mind is at many a point a peril to our race. It is this makes saving civilization a "race between education and catastrophe."

If the world is to perish in atomic fire, it will be because men's social minds have lagged behind their private killing power. By such a lapse we have let our soil run out to sea and allowed the great auk to pass into oblivion.

What can be done when the mind awakes in time, our saving of the bison at the eleventh hour attests. And now in the calendar we confront another test of our intelligence.

We need somehow an arousing of public opinion to the long-range importance of this reform, and its benefits to the future of all men. Let's put our shoulders to the wheel and do it now!

PROGRESS TOWARD EFFICIENCY

By Vincent C. O'Leary
Jefferson High School, Lafayette, Indiana

From School Science and Mathematics, January 1951

OF all the progress that man has made, it is ironical that here in the middle of the twentieth century we are using an irregular, unbalanced and unsettled calendar that was devised 2,000 years ago.

Until 21 September 1949, there was hope that we might start the year 1951 with an efficient, streamlined perpetual World Calendar. On that day, the 14-nation General Committee of the General Assembly of the United Nations postponed action on The World Calendar by a tie vote of four to four. Four abstained and two were absent. A simple majority was needed to obtain action at the Fourth Session.

The tie vote showed the United States, United Kingdom, Philippines and Denmark opposed to discussion of the calendar reform. Voting for discussion were Canada, China, Chile and Venezuela. Abstaining were the U.S.S.R., Poland, Pakistan and Brazil. Greece and France were absent.

This result has forced a new adoption date for The World Calendar, i.e., Sunday, 1 January 1956, the next available date when Gregorian and World Calendar coincide.

The calendar we use today is essentially the one introduced by Julius Caesar in 45 B.C. Caesar's calendar had a regular arrangement of months—31 and 30-day months followed each other in regular sequence except that February had 30 days in leap years only.*

A cringing Roman Senate, wishing to flatter Augustus Caesar by naming an odd numbered month after him, broke Julius Caesar's regular month arrangement, added a day to August and mussed up the other months, cutting February to 28.*

When Caesar undertook to reform the calendar he borrowed an astronomer and mathematician from Cleopatra—Sosigenes of Alexandria. Under the arrangement made effective by Caesar with Sosigenes' advice, leap year was to come in every fourth year. When Caesar was stabbed in the Senate, his calendar which was left to the Pontiffs to administer was first put out of kilter because the Pontiffs put in a leap year every third year. Augustus straightened this out later by cutting three leap years.

The year is not quite 365¼ or 365.25 days long—the year is really only 365.242216 days in average length. This difference amounts to 11 minutes and 14

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* *Editor's Note:* This version of the Julian and Augustan reforms is disputed by Dr. Roscoe Lamont upon the authority of Censorinus and Macrobius. See: "Augustan Myths," *Journal of Calendar Reform*, Vol. 9, p. 10.

seconds per annum, and by the sixteenth century this error had accumulated to the extent that the spring equinox occurred on 11 March instead of 21 March.

To correct this error, Pope Gregory XIII in 1582 decreed that 5 October should be 15 October. Since Caesar's calendar made too many leap years—every four without exception—Gregory also decreed that century years should not be leap years unless their date numbers were exactly divisible by 400. Even this plan will give a slight error which will amount to one day in about 3,300 years.

The amended Julian calendar, known as the Gregorian calendar, is now used in practically all civilized countries; but its adoption was slow and painful. Gregory's revision had a strong religious flavor and coming as it did at the time when Protestantism was making headway it met with violent opposition. It took Germany 118 years after the Papal Bull had been issued to break away from the old order. Denmark and Holland also waited the same number of years before requiring by law the revised calendar. Although Scotland adopted the new style in 1600, England and the American Colonies clung to the Julian order for 170 years and Sweden a year longer. Even then, in England riots accompanied the carrying into effect of the new dates where the feeling of the laboring class was the loss of eleven days out of life with attendant loss of wages. Japan adopted the Gregorian calendar in 1873, China in 1912 and Russia in 1918—336 years after the reform began. Three hundred millions of people in Asia, Africa, and Europe have made the change since World War I.

The Gregorian calendar with its unequal lengths of the months and many variations from year to year has not been a satisfactory tool for industry, finance, commerce, courts or schools, wherever it is necessary to determine dates in future years.

The proposed World Calendar has four equal quarters each consisting of 13 weeks or 91 days and beginning on Sunday and ending on Saturday. Every month has 26 weekdays plus Sundays. The first month of each quarter has five Sundays, other months four Sundays. Holidays are fixed, falling on the same day every year, and thus the calendar has true comparability, not for a year but for centuries. The quarters of the year are equalized and the days of the week and dates always agree.

The World Calendar has only 364 numbered days. The 365th day, known as W December or Worldsday, comes between 30 December and 1 January. Always coming between a Saturday and a Sunday, it gives the world a three-day week-end holiday which, it is hoped, will be celebrated in every country as an international holiday for world-wide peace and unity. Leapyear Day, known as W June, has been placed between 30 June and 1 July. Falling between a Saturday and a Sunday, it would supply another three-day week-end holiday, to be observed throughout the world.

There have been many unsuccessful attempts during the last 100 years to bring about a calendar revision. As early as 1834, an Italian priest, Marco Mastrofini, proposed a perpetual 12-month calendar of 364 days with the 365th day added as the closing day of the year and inserted between two weeks—giving a three-day week-end.

In 1849, the French philosopher, Auguste Comte, proposed the Positivist Calendar. This plan called for a year of 13 months of 28 days each, the extra month called Sol coming between June and July.

Although this calendar was rejected by the Astronomical Society of France in 1887, it was revived in simpler form early in the present century by an English railway auditor named Moses Cotsworth, who advocated its adoption on the ground of simplification. After 20 years of effort, Cotsworth got the backing of George Eastman of Kodak fame. Eastman working with the United States Government got a National Committee established of which he was chairman; and a report issued from Washington in 1929 recorded an amazing amount of support for the 13-month calendar.

The disadvantage of this calendar is that much business is done on the quarter- and half-year basis. Railways, banks, industries, utilities, governments, etc., issue reports and balance sheets quarterly and semiannually. For this purpose any 12-month calendar is preferable. Furthermore, as P. W. Wilson points out in his *Romance of the Calendar*, if the 13-month plan were adopted, "more than a quarter of the days of the year would have to be moved out of their months—a very grave disturbance of dates, civil, religious and personal."

To Elisabeth Achelis, President of The World Calendar Association, must go credit for putting before the nations a calendar more acceptable to the mass of people than one with 13 months. From a life of cultural and social diversions, Miss Achelis was aroused by antagonism to the 13-month plan proposals which she believed complicated rather than simplified the calendar. When, in 1930, she was confronted with a plan which appealed to her as a satisfactory solution of the problem, she cut loose from her former pursuits and pledged her talents to the cause. Untiringly, she demonstrated the superiority of the 12-month, equal-quarter plan (The World Calendar) and soon became a leader in calendar reform.

In a relatively short period, most of the support for calendar reform obtained by the International Fixed Calendar League, on which Moses Cotsworth had been working for 25 years, was transferred to The World Calendar. A labor conference of the American countries endorsed The World Calendar at Santiago, Chile, in 1936, and requested the League of Nations to study the question further.

In January 1937, the Chilean delegate submitted to the Council of the League of Nations an international draft convention for the adoption of The World Calendar. The Committee of Communications and Transit was then appointed to sound out the various States on the question in order to receive their replies before the following 1 August. Of the 45 governments which answered, 14 declared themselves in favor of The World Calendar. However, only six nations positively rejected the project. On the basis of this survey, the Council at its 98th session, in September 1937, withdrew the question from its agenda.

In 1946 a joint resolution was introduced in the Senate and House of Representatives calling for adoption of The World Calendar in the United States. In 1947 and 1949 similar bills were introduced. In 1949 The World Calendar was presented to the Fourth General Assembly of the United Nations but no action was taken.

If United Nations approval can be obtained in 1951, the nations will have a full year, 1952, for ratification; and three preparatory years, 1953, 1954, and 1955, before the next available adoption date—Sunday, 1 January 1956.

HOW TO GET PUBLIC SUPPORT

By Jerome S. Schwartz

Here is a Manual of things that any individual can do to help secure adoption of The World Calendar. It is prepared by a public relations specialist who has had many years of experience in promoting good causes. His instructions and suggestions will prove invaluable to members of women's clubs, service clubs, discussion groups and many others who want to do something constructive toward an expanded public interest in the revision of the present calendar.

WITH 1 January 1956 set as the new date for adoption of The World Calendar, the help of every adherent to this much-needed reform becomes necessary to sustain and extend public interest.

Let us say that you are convinced of the soundness of The World Calendar. You yourself are aware of the expensive and troublesome quirks of our present time-reckoning method and perhaps you talk to your friends about improving matters. "But what more beyond that can I do?" you may ask.

Plenty! Influencing your immediate acquaintances is important, but there are also numerous things you can do to carry the idea home to people you don't know personally. The World Calendar Association and its Affiliates campaign actively to teach the necessity of change. They get their message across to the general public through the press, over the radio, at meetings of large national organizations, through supplying the *Journal* and literature to libraries and in many other ways. But their power to influence public opinion is small in comparison with the combined efforts of their 10,000 members, and thousands of active friends.

Further along I shall suggest specific ways in which you can help the Association's five-year plan for adoption of its improved calendar. But first of all, go back over what you know about the need for calendar reform. Ask yourself what the most important things about it are, because those are the arguments you will want to emphasize. Remember that in a world in which many ideas are in competition, people generally have time only for the high points. Be able to show quickly the defects of the present calendar and the advantages of The World Calendar. You should be able to explain in a minute how unequal quarters and the year's constant shifting make comparisons difficult and inaccurate, and how The World Calendar, with equal quarters and every year the same, simplifies record-keeping and increases the accuracy of comparisons.

Another point which attracts newcomers to the idea of calendar reform is the opportunity the new calendar affords for stabilizing not only the year and periods within the year, but also holidays. Who is not intrigued by the idea of adding holidays to week-ends, thus creating usefully long periods for recreation while at the same time eliminating the midweek

holidays that disrupt school, business and other schedules.*

And speaking of arousing interest in calendar reform, the writer has often done this by merely asking groups of listeners on what day of the week they were born. Almost invariably the answer is an array of puzzled looks. The subject of calendar reform quickly becomes not an academic but a personal matter. It is then easy to go forward to an explanation of the day-and-date feature of The World Calendar, and next to its other advantages.

Having selected the chief faults of our present calendar and the chief talking points of the logical, workable World Calendar, you are now ready to employ this information usefully. Let us start with one of the simplest but most effective ways of publicizing ideas, the letter-to-the-editor. Newspapers are always eager for expressions on live topics. They know that there is a wide interest in their letter columns—people always like to learn what others are thinking, and editors know it. Keep your letter short and try to hook it to some occurrence of topical interest: a holiday that falls at an awkward time or even a particularly desirable time, to Leap-Year Day (29 February 1952 is one) or to some other idiosyncrasy of our present calendar. If you can link your letter-to-the-editor to some local problem—the effect of calendar deficiencies on a local industry, for instance—that will increase its chance of being printed. So will linking it to some world event.

While on the subject of letter writing, it should be said that letters to public officials are also effective, especially because the United States Constitution assures to every citizen the right to petition the Government. The very fact that many citizens intend to write and few do is of importance itself. People in public life know that even a few letters on a single subject betoken the sentiments of many, and since letters are often the only barometer of the public will, they are regarded seriously. Again, keep your letter short. If you want to supply details, it is wise to enclose literature. The recent booklet, "Improve the Calendar: What's Wrong with It, How to Fix It," is ideal for this purpose. Incidentally, it is also advisable to enclose literature when addressing editors, educators or others who may not be completely familiar with the subject, and who are accustomed to digesting documentation.

In your letter writing do not overlook the importance of urging the Secretary of State to act through the United Nations. You may also address your plea directly to that body by writing the Secretary-General. You are almost always sure, even when no reply is forthcoming (though one usually is), that your letter has been considered and tabulated or otherwise recorded. Thus, long after you have written it, there may come a time when its influence is felt.

If you have ability as a speaker, there are almost endless opportunities for spreading the word about calendar reform. You can contact the program director of a local radio station and ask him to help you put on a talk or a round-table

*In this connection it should be emphasized that such extended week-ends can be enjoyed only after the calendar has been established on a permanent basis; otherwise days would run away with dates and the reverse. These week-end holidays have high human values, especially when they include periods of both physical leisure and spiritual creativeness.

discussion of calendar problems. Many local forums and discussion groups already exist, in which case your task is considerably simplified. But assuming that you go ahead alone, it should be easy to interest local businessmen and educators in going on the air with you—they both have a stake in a better system of time-reckoning.

There are also many chances for you to appear before clubs and other groups to which you belong or to which you may be invited. Whenever you speak it is a good idea to "leave something behind and take something along." Distribute literature if you can and get the names of persons who are especially interested. Send these names along to The World Calendar headquarters where they can be put on the list to receive the *Journal* and other publications.

But even if you are not a good speaker yourself, it is quite easy to organize calendar discussions. You can even get them on television. Remember that the last part of that word is "vision." Combine interesting visual effects with the oral presentation and you can devise the "different sort of show" which program directors seek.* Here again the fact should be emphasized that people are interested most in those aspects which influence their lives. Try to relate the subject to the watcher's family life, job, desire for an orderly existence, and so on.

Naturally there will be some calendar enthusiasts who feel they lack the experience to stage some such show as described above or to take part in one. But there are other simpler things that almost anyone can do. For instance, arrange a calendar display at the local library. Most libraries have several books on calendar reform. These can be grouped on a table with a sign bearing a provocative statement such as "Our Present Calendar—Thief of Time." Or if that seems too startling the sign could say, "A Better Way to Reckon Time." Central in the display could be a chart showing, side by side, the changeable Gregorian calendar and the perpetual World Calendar. Such a chart can be obtained free of charge from The World Calendar Association, or it can be an enlarged photostatic or photographic copy of the center spread found in the Association's "Improve the Calendar" booklet. Then, of course, you will want the display to contain something that can be taken away and studied at leisure—copies of the booklet just mentioned and possibly copies of the *Journal of Calendar Reform* also.

The same sort of exhibit can be used in schools and colleges, or if the opportunity presents, at conventions of educational, scientific, professional and other groups.

Another simple way to create interest in calendar change is through news articles. Newspapers are always on the alert for "feature" material or straight news accounts about interesting subjects. For the news type of story particularly, it is necessary for something to "happen." Newspapers report events. But any activity such as already outlined in this article is an event. Whenever you have decided to initiate a forum, display or other activity—in other words, to make something happen—notify your neighborhood paper and the "downtown" press that the

*Examples of visual effects: Blow-up chart comparing old and new calendars, chart showing development of calendar from Egyptian times to the present; graphs revealing statistical disparities caused by the present calendar's unequal quarters and other defects.

event is scheduled. When the event takes place, invite the "city desk" to send a reporter. In your note give a few of the facts, enough to tell what the activity is about.

Whatever activity you engage in, the "house organs" of your profession, your company or your fraternal society will be interested. Editors of these closely read publications are always on the lookout for articles about "outside" interests of their readers. They're sure to see a "story" in you and your espousal of calendar reform.

Recent developments in education make calendar reform more appropriate than ever for classroom study and discussion. The trend today is away from rigid courses of study—away from the three R's and toward a freer and wider choice of subjects. Children are encouraged to "learn by doing." In high schools especially, the students are encouraged to conduct investigations of their own, on the theory that being a frequent participant in events is better than always acting the spectator. With this new philosophy of education has come an increasing use of "props"—charts, posters, pamphlets and similar materials.

As a subject for study and discussion, calendar reform finds itself perfectly at home in college halls. Indeed, the genesis of calendar reform has been among scholars, and the promise of human advancement this subject holds has always been an attraction to teachers and serious students. Extensive research in colleges has contributed much to what is known about time reckoning.

Calendar reform has been found useful for classroom work in such courses as sociology, business administration, statistics and political science. Where special courses are given in international cooperation, a universal calendar is sometimes examined as one additional source of common ground among peoples. Almost everywhere that calendar reform has been studied, The World Calendar has emerged as a logical and attainable revision.

The World Calendar Association is prepared to supply pamphlets, charts, the *Journal* and research data for college use.

As the public relations specialist sees it, modern reforms are generally accomplished in four stages. First comes the *need*. Then comes the *plan*—usually devised by a small group of thinking people. Next comes a long period of patient *work* wherein widespread interest is generated. Finally there comes the *time*, a day when people say, "This has gone on long enough, let's have a change."

In the case of calendar revision, the *need* is plain. The *plan* is here—in the eminently efficient World Calendar. With its many adherents helping to carry out the *work* of The World Calendar Association, achieving the *time*—the day of accomplishment—becomes a reasonable prospect.

Let us all work together toward Sunday, 1 January 1956! And why that particular date? Because on that day and date both the old and the new calendars agree, making the changeover smooth and easy.

COMING—A 2,000th BIRTHDAY

By Ernest R. Dayton
Vice President and Comptroller of The Russell Manufacturing Company, Middletown, Connecticut

It was not Mr. Dayton's original intention to produce anything for publication. He prepared this material as the basis for an address before the Middletown Exchange Club. "It had occurred to me," he writes, "that here was a good topic for one of our luncheon meetings, but I was astonished at the enthusiastic reception it received. My little talk aroused a lasting interest among my listeners. . . . If I had originally started out to write for publication I might have done it somewhat differently. However, this is a good example of a treatment which proved keenly interesting to an uninformed audience. I have been an enthusiastic proponent of The World Calendar for a good many years, and am happy if this article makes some small practical contribution to the cause."

OUR present calendar, as installed by Julius Caesar in 45 B.C., will soon be 2,000 years old. A good way for the world to celebrate this 2,000th anniversary would be to take up energetically the matter of improving our venerable and inadequate method of time measurement.

In considering such a project, it will perhaps be helpful and interesting to go back into history and review the origin of our various systems of weights and measures.

From the earliest times, it appears that methods and means of measurement have occupied the attention of civilized man, and represent one of the factors that have influenced in a variety of ways his progress and development.

Ancient Egyptians, Babylonians and Assyrians displayed both ingenuity and mathematical skill in devising and developing means of measuring distances as well as establishing standards for the various dimensions and capacities of solid bodies. In trying to measure time, the regular recurrence of such phenomena as the succession of daylight and darkness, the phases of the moon and the regular recurrence of the seasons, attracted the attention of man even before the period of recorded history.

It is beyond dispute that time measurement was a subject of attention throughout the years of which we have any record, and here is certainly a matter which is intimately concerned with almost every aspect of daily life. It has become, furthermore, one of the necessities of daily living, inasmuch as by it we are able to regulate the various activities which contribute to human existence.

Primarily, our measurement of time may be divided into two general classifications: (1) the measurement of time within the day and (2) the measurement of time by longer periods. For the first of these we use the clock, or some modification thereof, and for the second, the calendar. Clocks in the beginning were of a very crude and

simple nature, with their humble origin in the sundial, or in burning candles, or in the hourglass. They proceeded through various stages of development to the wonderfully precise and accurate instruments which are in use today. The extent of the accuracy obtainable with modern timepieces is almost unbelievable. The United States Naval Observatory can make adjustments of time down to 1/8000 of a second.

As for our calendars, their history is equally complex. But whereas the clock has been constantly perfected and refined through recent centuries, the calendar which we are using dates back to the time of Julius Caesar—to the year 45 B.C. to be exact—with only one minor revision, which was made in 1582. Although this revision was necessary in the interest of accuracy, the calendar which we are using today is inferior in many respects to that of 2,000 years ago, because of the introduction, in A.D. 321, of the 7-day week, which does not coordinate with years, quarters or months.

It is incredible that modern man, who insists upon the utmost in accuracy and refinement in all the various accessories which are considered necessary to civilized existence, while lavishing his utmost effort and scientific skill on the development of precision instruments to measure short periods of time, has been content to measure longer periods, within the year, with a device that has not been improved since Galileo, a patched-up hangover from the days of Julius Caesar. Some of the outstanding defects of our present calendar are:

Fourteen variations of calendar years
Twenty-eight different kinds of months
Contains, in irregular order, seven months of 31 days, four of 30 days and one of 28 or 29
The months and quarters begin and end on any day of the week
The quarters and half-years are unequal, and each quarter has irregular months, weeks and days
Each month begins and ends on a different weekday
Months have a varying number of weekdays
Days and dates never agree from year to year
Holidays vary in their days and dates
Each year begins on a different weekday
Exact comparability within the year, or from year to year, is impossible

There are certain fundamental facts in calendar history that need to be emphasized in any consideration of future improvements and adoptions.

First, it should be pointed out that of all the various types of measurement devised by man, the measurement of time is the only one that uses natural units. There are three of these units, all of astronomical origin, and depending on the movements of heavenly bodies. The rotation of the earth upon its axis, constituting the day; the revolution of the moon about the earth, constituting the month; and the revolution of the earth about the sun, constituting the seasonal year. Perhaps a fourth factor should be added—the phases of the moon, which are the probable source of the week.

Now it so happens that not only are each of these units fixed and unalterable, but

also none of them are exactly divisible by or into any of the others, and the history of the calendar is man's attempt to fit these units together into a workable mechanism.

During the recorded history of man's attempts to measure time, there have existed, generally, three types of calendar: (1) the solar, which measures time by the sun, or the seasons; (2) the lunar, which measures time by the phases of the moon; (3) the luni-solar, which attempts to keep step with both the sun and the moon.

The solar type of calendar was first devised by the Egyptians, probably as a matter of necessity, in order to arrange and organize their lives to correspond with the annual inundation of the Nile valley, upon which all of their agricultural industry and food production depended. The early Egyptians had developed a rather high degree of mathematical, engineering and astronomical skill, although their first calendar was apparently somewhat of a rough and ready instrument. It recognized generally three seasons: Inundation, Coming Forth, and Harvest. As early as about 4500 B.C., however, the Egyptians were able to measure the length of the year with reasonable accuracy, and had placed it at 365 days, less than a quarter of a day off.

About 300 B.C., the Egyptian ruler proposed to introduce the leap year into their calendar, adding one day every fourth year, which was adopted by Julius Caesar. This results in an average year which is in error by only 11 minutes. Here is the actual beginning of our calendar, although we received it in a somewhat round-about way.

The lunar calendar is like that used by the Mohammedans today, based on the lunar cycle, without any adjustment to the annual seasons. So that about 33 years elapse before the seasons agree.

The luni-solar type of calendar was developed by the Sumerians along the Tigris-Euphrates valley some time around 3500 B.C. This year consisted of 12 lunar months. The length of the month was determined by actual observation of the moon. Toward the end of each month, observers watched the western horizon for the first appearance of the thin crescent which follows the new moon, and which was the signal for the start of a new month. To keep the calendar in step with the seasons, the Sumerians inserted an extra month every three years.

This calendar was inherited by the Jews and Persians, and is essentially the Jewish religious calendar in use today. Instead of inserting the extra month in a haphazard way, the Jewish calendar has a complicated system of intercalary months, adopted in A.D. 358. Obviously this calendar is not well adapted to commercial use, but serves its intended purpose very satisfactorily, with a high degree of accuracy.

The early Roman calendar was of the luni-solar type, very similar to that of the Jewish and Persian calendars, and was in all probability acquired from the same source. It contained only ten months, starting with Martius, corresponding to our March, and ending in December. It will be observed that the month names of September, October, November and December, still in use, originally designated the seventh, eighth, ninth and tenth months of the ancient Roman calendar. Later two more months were added, Januarius and Februarius.

Like many other Roman institutions, the calendar was managed in a haphazard and careless way with no regular rules for the insertion of extra months in order to

keep the calendar in step with the seasons. It was up to the authorities to do this whenever necessary and, as a consequence, the calendar became more or less of a political football. There were plenty of times when officials would stick in an extra month now and then in order to prolong their term of office.

In this respect, it might be observed that, while the Romans were highly intelligent, hard-headed, practical people, they did not exhibit any pronounced scientific ability. The indications are that mathematical or astronomical skill was not one of the predominantly outstanding Roman characteristics, and it is probable, therefore, that their treatment of the calendar was not as inhibited by such devotion to scientific principles as would have motivated some other peoples. Incidentally, the Romans' retarded mathematical progress may be attributed in large part to the Roman system of notation. How would you like to multiply 6,493 by 4,977 using Roman numerals?

When Julius Caesar came into power, the calendar had been so poorly managed that it was completely topsy-turvy. In other words, it indicated the beginning of spring when it was really the beginning of winter. Caesar, who appreciated that a properly designed and administered calendar would be of great value to the Roman Empire, set about correcting the situation. Unfortunately, the scientific training necessary to do this work did not exist in the Roman Empire, and it was consequently necessary to import it. Caesar, therefore, appealed to his girl friend, Cleopatra, to lend him some scientific assistance. She complied by sending an astronomer and mathematician named Sosigenes, who came to Rome and developed the system which we know as the Julian calendar. On the assumption that the year was 365¼ days long, provision was made for the insertion of an extra day every fourth year.

There was still one serious error in the Julian calendar. The length of the year was not exactly 365¼ days, but 11 minutes less. Sosigenes must have known this, for it was common knowledge among astronomers, such as Hipparchus, at least 100 years before. Presumably, he thought that this close approximation was good enough for the Romans, who probably would never need to worry about the difference. So, by the time the sixteenth century came along, the calendar was out of step with the seasons to the tune of ten days.

The Roman Catholic Church became conscious of this error because of its effect on the observance of Easter. At the Council of Nicaea, in A.D. 325, a rule for determining the date of Easter was adopted, according to which Easter became the first Sunday after the first full moon after the beginning of spring. Spring, however, was fixed as 21 March according to the calendar, and not according to astronomical observation. As a result, in the sixteenth century, because of the calendar error, the astronomical spring, or vernal equinox, occurred on 11 March, so that Easter was ten days late with respect to the seasons.

Pope Gregory XIII took up the matter and made two important changes in the calendar. He directed that three leap years should be dropped from each 400 years, and this revision so nearly eliminated the previous difficulty that it will now take the calendar 3,323 years from the time of adoption to accumulate an error of one day.

The second change was to turn back the calendar to a point where the vernal equinox would again coincide with the date, 21 March. This was accomplished by eliminating ten days from the month of October 1582. England and America did not adopt the Gregorian reform until 1752, by which time the error had increased to 11 days.

So far we have talked about days, months and years, and the week has been barely mentioned. The origin of the week as a unit of time measurement is not entirely clear. The Roman calendar had no week, and the early Christian calendar had neither weeks nor names for the days. The week with its day-names was introduced into the Western calendar by Constantine the Great. Just where he got it nobody knows. It may have come from Jewish Christians, whose ancestors may have inherited it from the Babylonians. The exact origin of our weeks and weekdays is one of the most complete mysteries in history. About all we know is that the Babylonian astrologers developed a system of assigning each hour of the day to one of the heavenly bodies. At that time there were five known planets, and these, with the sun and moon, accounted for seven. These were supposed to control the hours of the day, and the planet farthest from the Earth controlled the first hour of the first day of the month. This was Saturn, and the others, following in the order of their distance from the Earth, were: Jupiter, Mars, Sun, Venus, Mercury and Moon. The astrologers rotated them, hour by hour, in regular order throughout the 24 hours of the first day, and thence on into the following day. Since there are 24 hours and only 21 are accounted for by three repeats of this group of seven, it is obvious that the first hour of the second day would fall to the fourth in the list, the first hour of the third day to the seventh, then the third, and so on, through a cycle of seven days, when it would repeat.

Thus the first hours of these seven days would be assigned to Saturn, Sun, Moon, Mars, Mercury, Jupiter, and Venus. Eventually the day came to be named according to the planet ruling the first hour.

Although the week has become a very important element in our scheme of time measurement, it adds another complication to an already confused situation, since it does not fit either with a lunar month or with a solar year. Our months (except February) consist of four weeks with either two or three days left over, and our year consists of 52 weeks with either one or two days left over.

This brings us up to date on the obvious mathematical contradictions of our calendar. What is the practical effect of these shortcomings? Well, there are several, many of them serious and expensive. We have the case of weekdays marooned by holidays occurring on Tuesday or Friday. The losses to industry from absenteeism, to merchants from lost sales and from other causes, particularly difficulty in planning advertising and production for such days, represent a sample of the results of this condition. This is only one of our calendar handicaps.

What should be done about it? This is not a new subject, and various methods of calendar reform have been proposed over the last 125 years. One might well ask why it is that more progress has not been made in calendar improvement, and why

this important subject has not been given more enthusiastic attention. About the only explanation is that a change such as this comes very slowly, due probably to human resistance to change, however beneficial it may be. One case in point is that of the adoption of Standard Time, which required many years of promotion after it was first devised by Sandford Fleming in 1879. The confusion in clock time that existed in the United States and elsewhere before the adoption of Standard Time zones is difficult to realize now, and it seems unbelievable that it took so long a time to effect such a needed reform.

Today calendar reform is definitely on the march. The proposal that presents the most logical, workable and satisfactory solution is The World Calendar—primarily because it proposes a minimum of changes in the present system. Its equalization of quarters and half-years will facilitate exact comparisons in successive years, and this one factor alone assures it an enthusiastic welcome from business men in general and cost accountants in particular.

For an unbiased summary of its advantages, I quote a report made by Secretary-General Trygve Lie to the United Nations:

> Since The World Calendar is perpetual, all years would be identical except for the supplementary day in Leap Years.
>
> Its method of dividing the year into four equal and identical quarters makes it possible to use the quarter as a unit of sub-division, which is very convenient for certain aspects of everyday life.
>
> With the existence of this calendar, statistical surveys, budgetary estimates, financial operations and plans for economic and social organization may be drawn up in a much simpler fashion. Comparisons between any two periods may be drawn with simpler calculations and fixed formulae.
>
> Furthermore, periodic events, such as the convening of a Parliament, can be permanently fixed as to both the date and the weekday.
>
> The stability of fhe calendar also makes it possible to contemplate the stabilization of festivals which are at present movable.
>
> It must be noted that this reform would, to a great extent, meet the need of improving the measurement of time from the economic and social point of view.

The advantages of this scientifically designed calendar are, in fact, too obvious to require argument or further illustration, and the simplicity of the revision would make its adoption very easy. As a matter of fact, the only changes that would be necessary would be the addition of two days to February and one to April, and the dropping of one day each from March, May and August. As it is proposed that The World Calendar would not be adopted until Sunday, 1 January, coincides in our present calendar, the transition would offer no difficulties. The next occurrence of this coincidence will be in 1956.

A great deal of work has been done to awaken world-wide public interest in this calendar improvement, and much progress in this direction has been made. Already 17 nations have approved it "in principle." Here is a project that is worthy of the support, not only of our business men, but of all public-spirited and civic-minded individuals and organizations everywhere.

FROM THE MAIL BAG

Eighty British business men attended a discussion of calendar reform at the Southend Business Luncheon Club on 5 July. The World Calendar seemed to them such an obvious improvement on the present system that it is not easy to understand how any intelligent person could do anything but approve the proposed changeover in 1956.—Rev. W. Stanhope-Lovell, Westcliff-on-Sea, England.

Your interesting *Journal of Calendar Reform* has a prominent place in our reading room and gets the attention of both professors and students.—Ekrem Uluc, General Secretary, Technical University, Istanbul, Turkey.

I follow the progress of your Association with great interest, and if I can be of any service to you I hope you will feel free to communicate with me.—Raymond S. Hoover, Executive Officer, National Production Authority, Washington, D.C.

Your unceasingly strenuous efforts have greatly contributed to international acceptance of The World Calendar, and I sincerely hope the United Nations will take it up seriously for adoption in 1956.—S. Imoto, Municipal Planetarium, Osaka, Japan.

Rotary International is interested in the studies which are being made concerning a world calendar. Rotary's position on calendar reform is defined on Page 91 of its Manual of Procedure: "Any change in the calendar is a matter of interest to men and women all over the world. It is not advisable to take any steps to revise the calendar until representatives of all nations can gather and take part in the decision as to what revised calendar, if any, should be adopted."—Marlin K. Tabb, Rotary International, Chicago.

Now that we see the absolute necessity for rebuilding our world as a unity, we should strive to make it as perfect as possible. Calendar reform is important in this respect. Such legislation will be the way to draw in those nations who are standing aside.—A. Ruth Fry, Thorpeness, England.

Articles in the *Journal of Calendar Reform* are always interesting and convincing.—Catharine Ford, Librarian, General Federation of Women's Clubs, Washington, D.C.

We hope that The World Calendar, as proposed by your great Association, will be universally adopted so as to give the world a more precise and practicable calendar to follow.—Dr. Chu Chia-hua, President, Chinese Association for the United Nations, Taipeh, Taiwan, China.

Please be assured that we are happy to do whatever we can to help along this fundamental movement. It is gratifying to note the steady progress which the new calendar continues to make—H. S. Southam, Publisher, *The Ottawa Citizen*, Ottawa, Canada.

This calendar reform proposal is really a wonderful plan, and I do hope we get it into operation in 1956. I explain it to all my classes, and other teachers here favor the idea.—Brother Boniface, St. Xavier High School, Louisville, Ky.

In writing to the United Nations, I am merely asking them to set right a calendar which at present is so faulty and illogical that most of the people who use it don't know what it means or why it is as it is.—Gordon Parrish, Engineering Consultant, New York City.

Your idea has certainly some very great practical importance.— Marcus Wallenberg, Jr., Stockholms Enskilda Bank, Stockholm (member of the Council of the International Chamber of Commerce).

EDITORIAL PARAGRAPHS

There is much to be said from the point of view of economy for a balanced, stable and orderly calendar. Adoption of the change is a matter of getting people interested enough to examine the defects of the old system and the merits of the new.—*Cape Town (South Africa) Rotary News Letter.*

Revision of the calendar is again the order of the day in our scientific academies, economic groups and international organizations. It will bring improvements in the rhythm of many human activities, in age-old habits and traditions.—*Paris (France) Artisan Français.*

The Schenectady Museum now has an exhibit which shows at a glance the meaning of The World Calendar plan. Momentarily lighted pictures indicate the advantages of the new system. The display has attracted the interest of many visitors of all ages.—*Schenectady (N.Y.) Gazette.*

The obsolete and clumsy Gregorian calendar that regulates our lives has been under attack for many years. Superstition and reaction have conspired to delay agreement on a reformed calendar which will simplify our calculations.—*Western Business & Industry, Vancouver, B.C.*

One of the foremost advocates of calendar reform in Washington is Senator Estes Kefauver, who jumped to national prominence for his crime investigations. Two years ago he introduced a bill to give U.S. approval for The World Calendar.—*Quincy (Mass.) Patriot Ledger.*

Many people take the calendar for granted; they do not realize that it is the end-product of a long and painful process of evolution. This began when men first looked to the heavenly bodies to provide a yardstick for the measurement of time; there followed many centuries of patient study and of constant trial and error, and the ultimate result was the Gregorian calendar that we now use. Today there is a powerful movement afoot in the United Nations to replace the Gregorian calendar by a new World Calendar; already a number of nations have endorsed the step.—*Grolier Society Bulletin.*

The world is "so full of a number of things" that would be profitable to do that a great many people would be as happy as Robert Louis Stevenson's kings if only a respite from hot and cold wars gave mankind more opportunity to do them. One subject which seems potentially profitable is calendar reform. Cost accountants estimate that an improvement in efficiency over the present Gregorian calendar could save American business enough money to pay the annual interest on the national debt. That is a lot of money.—*Christian Science Monitor.*

Calendar reform, which has been on the way for many long years, is at last a current "order of the day," required for the improved well-being of the human race.—*Paris Courrier.*

Speaking at the Cape Town Rotary Club this week, W. H. Law, a retired educator, advocated a new uniform World Calendar. The savings in time and money of the new calendar are recognized by business firms.—*Cape Town (South Africa) Times.*

Why the nations of the world hesitate to adopt so simple and useful a device is one of those inscrutable problems in human nature.—*St. Louis (Mo.) St. Louisan.*

If you think we in the United States have trouble with our old-style calendar, then consider the case of the Fiji Islanders and be comforted. In the Fijis there is a house right on the 180th degree of longitude. When it's Sunday in the living room it's Monday in the kitchen.—*Napa (Cal.) Journal.*

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A Partial List of Organizations

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Assn. of British Chambers of Commerce
National Chamber of Trade (English)
London Chamber of Commerce
New York State Chamber of Commerce
Chicago Association of Commerce
Board of Trade, Halifax, Nova Scotia
Ottawa Board of Trade
Montreal Board of Trade
Osaka Chamber of Commerce (Japan)
Winnipeg Chamber of Commerce
Quebec Board of Trade

SCIENCE

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American Association for the Advancement of Science
American Philosophical Society
Seventh American Scientific Congress, Mexico City
International Astronomical Union, Commission 32
Royal Canadian Institute
Australian National Research Council
American Psychological Association
National Institute of Planning and Social Reform of the Republic of Cuba
Royal Astronomical Society of Canada
Science Society of China
Royal Society of Queensland
American Assn. of Scientific Workers
Mathematical Association of America
Academy of Arts and Sciences, Barcelona, Spain
Committee for Maritime Meteorology
Royal Society of New Zealand
Royal Society of New South Wales
Astronomical Soc. of Spain and America
Ninth Gen'l Chilean Scientific Congress
Colombian Academy of Exact Sciences
American Psychical Institute
Amer. Society of Agricultural Engineers
Australian Institute of Physics
Institute of Radio Engineers
Academy of Science, St. Louis

LABOR

International Labor Organization Conference, Santiago, Chile, 1936
Canadian Congress of Labour
Canadian and Catholic Confed. of Labour
Trades and Labour Congress of Canada
Canadian Telephone Employees' Assn.

EDUCATION

World Federation of Education Assns.
National Education Association
American Educational Research Assn.
National Council of Geography Teachers
Agricultural History Society
Duodecimal Society of America
Int'l Assn. of Y's Men's Clubs
Nat'l Assn. of Education of Chile

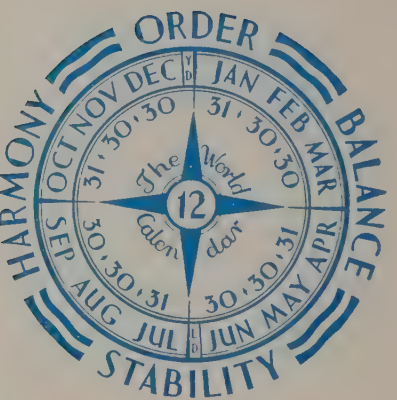
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American Institute of Accountants
American Industrial Bankers Association
Nat'l Fed. of Business and Professional Women's Clubs
Canadian Manufacturers Assn.
Inter-American Press Congress
International Affiliation of Sales and Advertising Clubs
Newspaper Advtg. Executives Assn.
Canadian Retail Federation
Controllers' Congress, National Retail Dry Goods Association
Mexican Hotel Association
Industrial Association of Austria
Assn. of Consulting Management Engrs.

MISCELLANEOUS

Amateur Athletic Union of the U. S.
Peoples Mandate Committee for Inter-American Peace and Cooperation

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After reading please pass on to others.

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SCIENCE & INDUSTRY

Journal of CALENDAR REFORM

BUILDING A BETTER WORLD

December 1951

THE WORLD CALENDAR

1ST QUARTER

JANUARY						
S	M	T	W	T	F	S
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2ND QUARTER

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3RD QUARTER

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4TH QUARTER

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W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days, 13 weeks or 3 months; the four quarters are identical in form.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.

VOL. XXI FOURTH QUARTER 1951 No. 4

THOSE who earnestly advocate revision of the calendar are alive to the vagaries of the present Gregorian system, particularly notable in the festive month of December. Christmas this year falls on Tuesday, wedging a business Monday between Sunday and the holiday. Likewise New Year's Day comes on Tuesday with the same inconvenient result. Next year will be just as bad; the two holidays will each fall on Thursday, leaving Friday a lonely business day between the festivities and a Saturday which is increasingly observed as a non-working day.

Here is an expensive and troublesome situation. How shall we fit our pattern of living to the annoyance of these lone business days, isolated between two non-working days? Are these days to be bonus holidays, or unsatisfactory work-days?

How much longer will the world tolerate its absurd, unreasonable calendar, one that not only hinders the efficiency of business and industry but also brings inconvenience and disorder to all our administrative, social and domestic activities?

The question applies with special force to leaders of public opinion *in the United States,* because there seems to be greater apathy and indifference to calendar reform there than in other lands. Canada to the north has repeatedly expressed its approval of The World Calendar, and so has Mexico on the opposite frontier. Central and South Americas, too, have demonstrated a keen desire for calendar change—with Panama, Peru and Chile taking leadership whenever the subject comes up before international conferences. During recent years, seventeen governments have approved The World Calendar in principle; but the United States has been the laggard. This government, in every instance, has lamentably displayed a do-nothing policy.

In the laudable endeavor of the United Nations to move toward a better calendar, it has been the United States delegation which has stood in the way of progress. Two years ago The World Calendar was on the preliminary agenda of the General Assembly, when the United States delegation insisted on postponement, urging that the agenda was too crowded and in a previous instance that other subjects were "more urgently important." But when is an agenda not overcrowded? And who is to judge the relative importance of the subjects which clamor for attention? How many subjects really outweigh the long-run benefits of bringing into everybody's daily living a greater order, stability, economy and harmony?

What is needed, and urgently needed, is not only the awakening of public opiniou in both the United States and England, but an equal desire of governments to uphold the United Nations in this worthy undertaking during this important year of 1952.



U. S. DEPARTMENT OF LABOR
OFFICE OF THE SECRETARY
WASHINGTON

OCT 15 1951

Miss Elisabeth Achelis, President
The World Calendar Association, Inc.
International Building
630 Fifth Avenue
New York 20, New York

Dear Miss Achelis:

I appreciate your kindness in forwarding to me, by your letter of September 20, a copy of the letter and article on "Labor and the World Calendar" which you sent to a large number of labor unions in this country.

The question of calendar reform, of course, is of direct and vital concern to all segments of our society. It is a step that must depend on widespread public understanding and support. I am indeed interested to learn of your efforts to bring this problem to the attention of organized labor in this country, and assume you are making similar efforts with respect to all groups.

The Department of Labor, of course, cannot presume to speak for the Executive Branch as a whole on a matter of this kind which covers interests within the scope of all Departments and Agencies. This Department, however, would expect to participate in any consideration of this matter undertaken by the Executive Branch of the Federal Government.

Yours very truly,

Maurice J. Tobin

Secretary of Labor

Journal of

CALENDAR REFORM

DECEMBER 1951

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BUILDING A NEW WORLD

By Anna Ruth Fry

From her home in Thorpeness, Suffolk, this veteran Quaker crusader sends a challenging message, urging the importance of calendar reform as part of a New World of Brotherhood. Miss Fry celebrated her 73rd birthday in September, and her fiftieth year as an international figure in peace and good works. She is best known in America as head of the Friends Relief Committee which aided victims of war in France, Germany, Holland, Serbia, Austria, Hungary, Poland and Russia—all of which countries she visited personally between 1914 and 1924. She has written a dozen books and many pamphlets on peace. Miss Fry's father, Sir Edward Fry, was a distinguished jurist who was appointed to the Hague Tribunal at its inception and sat in the first litigation submitted to the court, the "pious foundations" case between the United States and Mexico. The Fry family has been prominent among English Quakers since the 18th Century; their chief industrial enterprise is the oldest chocolate company in the world, now 200 years old. Miss Fry has recently accepted a place on the international Advisory Committee of The World Calendar Association.

WE are building a New World. At least we certainly hope we are, although it sometimes seems as though we are trying to destroy our old one. Change, at all events, is very obvious. For one thing distance is almost obliterated compared to what it used to be. So that we can imagine better our planet as the tiny speck that it is in the immensity of the gigantic Universe. And yet, despite the realization of insignificant size, mankind behaves like two dogs quarreling over a very small bone.

It is time to stop that, and to turn aside to find the indications of the beginnings of unity. For until we have really made it One World, we shall be threatened, as we are today, by annihilation through the wonderfully clever devices by which men destroy each other.

Let us build in our minds the picture of the united world we desire. It must be built clearly in our imaginations before it can be brought into reality. We want such a vivid picture of its advantages and its charms that the people of the world will *want* to give up their bad old enmities and isolations, and long for this New World. And when we have persuaded great numbers of people to think of it and to realize themselves as citizens of the world—not only of their county and country—they will begin to insist on its foundation.

To begin with, I hope it will have the immense benefit of *simplicity*. I cannot believe that the countless restrictions and regulations which afflict our present age are really useful or needful. What a number of everyday things might be simplified by being world-wide instead of national. Think of the complications of different moneys!



Harvest scene in the Suffolk farm country near Miss Fry's Thorpeness home

I think we English will have to copy our fingers and toes, and take to the sensible decimal system. Our weights and measures should certainly be simplified, to save a very great deal of useless trouble.

Obviously we need a world language. It might be either a new one like Esperanto, or the adoption of, say, Basic English so that we may talk to all our fellow-human beings, without difficulty. We need also free exchange of goods, and free travel wherever we desire.

Finally there is one complication of daily life, from which we all suffer alike, and which can be easily corrected if we go at it together. I refer to our Calendar. Many of us have hardly thought of the possibility of changing it, and have suffered in silence from its irregularities and inconveniences. The difficulty of reckoning, when month-days and weekdays are constantly in differing conjunction, is great.

Down through the ages, calendars have come and gone, and our present one has been tolerated for many a long year. But now an excellent system has been devised which would immensely simplify the difficulties and save us much time and trouble.

By making a change to The World Calendar, we shall forge one more link of world-mindedness. For it will give us every year one special extra day, Worldsday,

in which to realize our world citizenship, and to dedicate it to work for world unity. In leap year another extra day would be so dedicated—to Unity, Peace and Goodwill. Each such day might be marked by some special token of friendship to other nations, particularly those with whom we are not on the best terms. For instance, everybody's wages for that day might be given to a fund to help undernourished children in the poorest countries of the world.

Why the delay in adopting such a meritorious reform? The answer to this pertinent question is summed up mainly in one word—inertia. It is a very curious fact that there is a strong instinct in man to prefer darkness to light. We have a rooted objection to change.

In the small matters of daily convenience, great powers of persuasion and advertisement have to be used to introduce novelties. The desire for new advantages does not seem to come from those to be benefited, but from hardy crusaders. We are told that the man who had the idea of pneumatic tires was derided by Patent Office officials as "the fool who would ride on air." In 1865 an American newspaper declared that "well-informed people know it is impossible to transmit the human voice over wires—and even if it were possible to do so, the thing would be of no value." Only half a century ago the press ridiculed a man who had the "crazy notion" that he could supplant gas lights with electricity. In 1908 the Wright Brothers offered their inventions to the British Admiralty and were turned down on the ground that airplanes could not possibly have any military value.

This instinct or prejudice against the unknown and different is not limited to material devices; it applies to science, religion and international relations. Indian philosophy uses the analogy of the life of the chick inside and outside the shell. There must be some urge toward a less restricted life to induce the chick to break the bonds of his shell-surrounded existence and to venture into the unknown beyond. Primitive man felt himself living in a dangerous enemy world from which he was estranged. But as we develop, as we learn our essential unity with all men and our part in the great universe, we must dare to leave our shells behind and to break the bonds that restrain us.

Today we seem to have come to a crisis in the life of the world. In truth the times are ripe for change. The shell-life of each group of people, hemmed in by walls of distrust, by barriers of forbidden trade, is threatening the well-being of the world. Like the chick, we are faced with the alternatives of suffocation or a larger life.

So let us determine to share the wonderful blessings which God has given to our whole world, instead of trying to grasp and grab them only for ourselves. The resources and products of different countries are needed for all, for none of them contain all that is needed for its people.

What a wonderful *World of Brotherhood* we might then attain!

SO HERE COMES LEAP YEAR

By Frances Brentano

THIS fast-approaching Leap Year, 1952, may be the last time we shall see a 29-day February. I don't mean it's the end of the world, but only that we are all getting ready for a revision of our old calendar, and a good many people over at the United Nations hope that a new calendar will be adopted and installed in 1956—which means February will henceforth contain an invariable 30 days, and "leap day" will come in mid-year, at the end of June.

Leap Years we shall always have, because they are a mathematical necessity. The extra dividend of one day which Father Time pays us in 1952 is an ingenious device of the astronomers to keep our years in step with the sun and the seasons. As an extra dividend, it means a billion-dollar bonus to American wage earners—one additional day's pay in 1952 as compared with 1951.

Fact and fable are strangely mingled in the history of Leap Year. What would seem to be fable is revealed as fact, and what has long been accepted as historical fact is often discovered to have no real basis.

For an example of a Leap-Year legend that would ordinarily be dismissed as pure fancy, take the time-honored tradition whereby man-craving girls may make their own proposals of marriage during Leap Year. Most of us will be surprised to find that this privilege is based on actual legislation, enacted in at least four different countries several hundred years ago. According to ancient legend, it was all started in Ireland by St. Patrick the missionary during the early part of the fifth century.

It became a "law of the land" in 1288. In that year there was an act passed by the Scottish Parliament in which "it is statut and ordaint that for ilk yeare known as lepe yeare, ilk maiden ladie, of baith high and lowe estait, shall hae libertie to bespeke ye man she likes."

A few years later a similar law was passed in France. Then in the 15th century, just before Columbus sailed for America, the tradition was legalized in Italy by the governments of Genoa and Florence. In England the custom had become a part of the common law by 1600, when the legal books defined it thus: "As oft as lepe yeare doth return ye ladyes have ye privileg of making love to ye men, which they doe either by wordes or by lookes, as to them seemeth proper."

The Scottish law had a neat little enforcement clause to make sure the men took it seriously. It provided that "gif he refuses to tak her to bee his wyf, he shall bee mulct in the sum of ane hundredity pundis, or less as his estait may bee, exceppt and alwais gif he can mak it appeare that he is betrothit to another woman, then he shall bee

free." In old England, a man who refused a Leap-Year proposal had to pay a silk gown as a forfeit.

St. Patrick's legendary connection with the feminine Leap-Year privileges is discussed in many lives of the saint. It is summed up thus in an Irish guide-book:

> The missioner to Ireland lived in a distant era when celibacy was not alway required of religious groups. Having driven the frogs out of the bogs and the snakes out of the grass, he was once walking along the shores of Loch Neagh when he was accosted by lovely St. Bridget in tears. Sobbingly she told him how a mutiny had broken out in the school over which she presided, her girls claiming the privilege of popping the question. St. Patrick, deeply touched, said he would accord them the right to do so every seventh year. St. Bridget threw her arms around his neck crying, "Arrah, Pat my jewel, I daurn't go back to the girls wid such an answer. Make it one year in four."
>
> St. Patrick yielded. "Bridget, acushla, squeeze me that way again, an' I'll give ye Leap Year, the longest of the lot!" Taking courage at this, Bridget at once asked Patrick to marry her, but of course he could not accept; so he patched up the difficulty as best he could with a hearty kiss and a silk gown.

There are several questions about Leap Year that will occur to any thoughtful student of the calendar. Why do we have Leap Year, with its extra day? Who started it? How necessary is it? Why was the extra day jammed into February? Why did Christopher Columbus regard 29 February as a special day of thanksgiving?

The reason for Leap Year is found in the astronomical length of the year. A year is the time it takes the earth to circle the sun—and the astronomers have worked this out as approximately 365.2425 days, or 365 days, 5 hours, 49 minutes and 12 seconds. So we have a calendar with 365 days in ordinary years, and every four years we add a "leap day," which picks up the extra fraction and keeps our calendar in step with the seasons. (This still isn't quite exact enough, so we omit leap day in "century years" three times in four centuries; the year 1600 was a Leap Year, the years 1700, 1800 and 1900 were *not* Leap Years, the year 2000 will again be a Leap Year.)

Founder of Leap Year was Julius Caesar, who is the grandfather of the calendar we now use. He got the idea from the Egyptian astronomers, who had long before suggested the insertion of an extra day every four years but had been unable to get the Egyptian people to adopt it. Julius put it into his calendar in 45 B.C., but it was so much of a novelty and so poorly understood by the Roman authorities that for a generation they mistakenly made every third year a Leap Year instead of every fourth. Eventually they got on the right track.

There is no agreement among historians as to which were the Leap Years in the first half-century of the Julian calendar. Some hold that 45 B.C. was the first Leap Year in history. Others place it in 44 or 42.

Caesar's rule of one year in every four worked all right for a thousand years or so. Then its little errors began to accumulate. And along came Hollywood.

Hollywood? One is surprised no end to find this name in the ancient history of Leap Year and calendar reform. It happens to have nothing to do with the movie capital of the world. John of Hollywood was a Scotch monk who lived in Paris in the middle of the 13th century. He made a sensational discovery. He proved that the

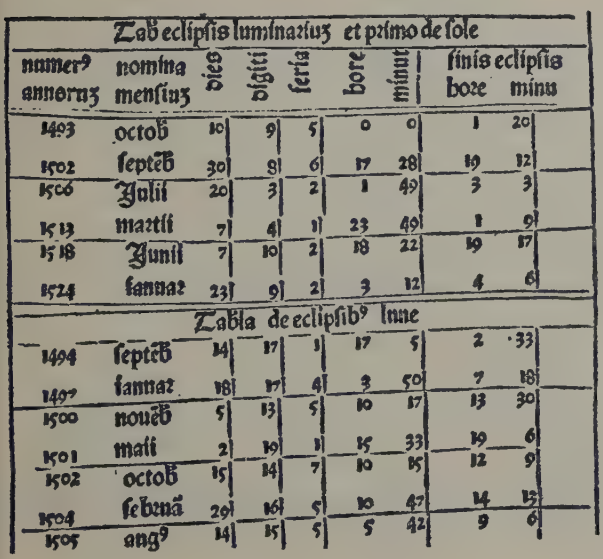
Julian calendar was currently seven days behind the real date calculated according to the sun. He pointed out that Julius Caesar's Leap-Year rule was at fault. He started a propaganda campaign to correct it. But it was not until three centuries later that his campaign bore fruit. Then it was Pope Gregory who fixed things up, dropping ten days out of the year and amending the Leap-Year rule so that the same situation will not occur again.

Many people have wondered why Caesar inserted his quadrennial leap day in February. The explanation is fairly simple. The Roman year in ancient times started on 1 March (as indicated by the fact that we still call several of our months by Roman number-words—September means "seventh month," October means "eighth month," November means "ninth month" and December means "tenth month"). February was the last month of the old Roman year; leap day was just tagged onto the end of the year.

So 29 February has been a "curiosity" among the dates of our years. It is the birthday of nearly 100,000 Americans, who are thus placed in the odd position of having an authentic birthday only once in four years. The common law provides that they are entitled to observe 28 February as their natal date in non-Leap Years, this procedure being based on a royal proclamation made by Henry III in the year 1236.

In the ecclesiastical calendar, 29 February has its own saint—an English holy man named Oswald who died on 29 February, 992.

Rossini, the musical composer, was born on 29 February, 1792. Seventy-two years later he celebrated what he called his 18th birthday with a festival, where he declared his intention of turning over a new leaf and disregarding "the frivolities of youth and the indiscretions of a teen-ager." Rossini, of course, was wrong about its



Tab eclipsis luminariuz et primo de sole

numer9 annoruz	nomina mensiuz	dies	digiti	feria	bore	minut	finis eclipsis bore	minu
1493	octob	10	9	5	0	0	1	20
1502	septeb	30	8	6	17	28	19	12
1506	Julii	20	3	2	1	49	3	3
1513	martii	7	4	1	23	49	1	9
1518	Junii	7	10	2	18	22	19	17
1524	ianuar	23	9	2	3	12	4	6

Tabla de eclipsib9 lune

1494	septeb	14	17	1	17	5	2	33
1497	ianuar	18	17	4	3	50	7	18
1500	noueb	5	13	5	10	17	13	30
1501	mali	2	19	1	15	33	19	6
1502	octob	15	14	7	10	15	12	9
1504	febuā	29	16	5	10	47	14	13
1505	aug9	14	15	5	5	42	9	6

Christopher Columbus had good cause to remember Leap-year Day, 29 February of the year 1504. Here is a page from the almanac he used at that time, on his fourth voyage. Hostile Indians refused supplies, and he threatened to darken the moon. The Indians waited until they saw the moon growing dark; then they became frightened and brought him everything he asked. Reading from left to right across the table on the line starting with 1504 (the year), the "februa" and 29 mean 29 February; the 16 and 5 relate to the degree of totality (in this case the earth's shadow was 1¼ times the size of the moon); the 10 and 47 stand for 10:47 o'clock, the starting time of the eclipse; and the 14 and 13 stand for the end of the eclipse, 13 minutes after the 14th hour.

being his 18th birthday, for the year 1800 was not a Leap Year, so the festival celebration occurred on what was really his 17th.

Gilbert and Sullivan made the same mistake in Pirates of Penzance, where the plot revolves around a pirate's apprentice who was born on leap day. The authors did not realize that 1900 would not be a leap year, and therefore their calculations were not quite accurate.

Descendants of Christopher Columbus long observed 29 February as a special day of thanksgiving. Their distinguished ancestor had one of his most dangerous adventures on that date in 1504. He was wintering in a sheltered bay on the island of Jamaica; the natives had grown hostile and were withholding supplies that he urgently needed, until on leap day he ingeniously worked upon their superstitions by predicting an eclipse.

In England and Holland, leap day is quite generally observed as a festive occasion. Topsy-turvey parties are the custom with the girls acting as hosts and escorts, and taking the lead in party games and contests. Society folk in New York City still observe the day with a Leap-Year Assembly, a fashionable subscription dance which goes back to colonial times; the formalities are arranged in reverse—the stag line is composed entirely of girls, who take the men to dinner, supply them with floral bouquets and cut in for the general dancing.

One of the little-known facts about Leap Year is its connection with playing cards. Historians say that playing cards, as we know them today, are probably a



Modern playing cards are an evolution of early Egyptian calendars, which bore hieroglyphic symbols for the weeks and were grouped into months.

direct development of small one-week Egyptian card-calendars, which originally were combined into a pack of 52, to make a complete calendar for one year. The 53d card, now the joker, was provided to take care of the odd 365th day of the year and it also represented the 366th day in Leap Year. Samuel Zovello, in his "History and Origin of Playing Cards," explains:

Knowledge of the calendar, among the Egyptians, was the possession of the priesthood, carefully guarded as a religious secret, which fostered belief that the priesthood possessed supernatural powers of divining the future . . . The calendars were kept in the temple on rolls of papyrus, which were easily lost or stolen. In case of loss or theft, precautions had to be taken to prevent the new possessor from using this secret information. So the papyrus rolls were divided into sections which could be easily fitted together when the priests wished to consult them. Separation of the papyrus into weeks was the logical outcome. The calendar became a package of 52 equal strips or cards, with one extra piece for the 365th and 366th days.

Fortune telling from cards is thus shown to be one of the most ancient developments of the use of this material. In later centuries, the charlatans who used cards for this purpose wandered over the world and became known as "gypsies," the word of course being a corruption of "Egyptians" . . . The original markings of the four suits of cards were: a cup, a five-pointed star, a sword and a spade. These emblems were associated with the Egyptian belief that the universe was composed of four elements—water, earth, air and fire. In the evolution of playing cards, the figures, marks and symbols have been frequently altered. It was a Frenchman, Jacques Gringoner, who developed the modern playing card, using it as a means of entertaining the French king, Charles VI, during his fits of insanity. Gringoner went back to Egypt for his models and largely retained the Egyptian calendar symbols. So our present-day pack of playing cards is an almost exact duplicate of the ancient Egyptian calendar. The Egyptian five-pointed star was replaced by the French fleur-de-lis, now the club. The sword has been simplified into a diamond. The spade is retained, and the cup is now a heart, owing to a curious misinterpretation of the old French word for chalice, *chorur*, into *coeur*, or heart.

What of Leap Year in the calendar of the future? The World Calendar, as now current in the United Nations, will shift leap day from the old 29 February to the middle of the year. It will be called "W" or 31 June, an international holiday.

Under the new calendar, February will have 30 days, and will at last be put back on a more equitable basis with the other months of the year. The calendar will divide the year into identical quarters of 91 days each—plus an extra day at the end of the year to be called Worldsday, "W" or 31 December. In this equal-quarter plan, every three months will be alike: people will memorize the quarterly calendar just as they now memorize the multiplication table. Each quarter will start on Sunday. The whole plan is so simple and straightforward that people generally will hardly know the difference—except that all their calendar calculations will be made easier.



•LEAPYEAR DAY FROLICS IN MERRIE ENGLAND• (*from an old print*) •

CHINESE LEADERS URGE ACTION

By Winifred Raushenbush

AS great China, the ancient enduring seed-bed of the world's oldest civilization, faced one of the major ideological and political crises of its history, the Chinese Association for the United Nations called a meeting last August of the nation's greatest scholars, scientists and leaders on beleagured Formosa, to hold a "Symposium on The World Calendar."

The principal speakers were members of the Academia Sinica, an organization of learned men similar to the French Academy in Europe. All of those in attendance were exiles from their native land, who had accompanied the Nationalist government on its flight from the Communist conquerors. They represented the remaining nucleus of scholarship in a country which has revered learning for more than forty centuries.

Invitations to the Symposium called attention to the fact that: "Calendar Reform will shortly be placed on the agenda of the next session of ECOSOC (Economic and Social Council of the United Nations). It is an important problem that calls for attention, and any recommendation we can make will surely meet with worthy consideration by the nations of the world. Dr. Chu Chia-hua will preside, and the opening speakers will be Professor Tung Tso-pin (historian) on *Ancient Chinese Calendars,* and Professor Kao Ping-tze (astronomer) on *The World Calendar.*"

The result of the meeting was an enthusiastic endorsement of The World Calendar, and a recommendation urging speedy action to adopt it internationally. A complete report of the Symposium, in English, has been published in a 44-page booklet by the Hsin Sheng Printing Works in Taipeh, Formosa, and is available through the Chinese Association for the United Nations. It is an interesting and characteristic example of erudite and competent Chinese scholarship, especially notable in its broad comprehension of the varying values and contrasts with which the subject of calendar reform is approached from the viewpoints of the East and the West.

In an introduction to the formal report, the distinguished editor observes: "The proposed World Calendar is now being seriously considered by practically all the learned circles of the world. Of course, one cannot approach to a better understanding of this reform if he is ignorant

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Editor's Note: For many years, Mrs. Raushenbush has been a student of Chinese history and culture. She worked on the Chinese angles of a Study of Race Relations on the Pacific Coast, financed by the Institute of Social and Religious Research, and directed by Professor Robert E. Park of the University of Chicago. As a result of this study, she wrote a monograph picturesquely entitled "The Great Wall of Chinatown, and How the Chinese Mind Their Own Business Behind It." She was the first American to analyze the origin of the fighting tongs of Chinatown. She is the author of 20 books and pamphlets in this field.

of the ancient calendars which form an essential part of our knowledge on this subject. China's earliest contributions to the study of calendar problems are therefore especially worthy of notice. Our two opening speakers have served well to explain the background and significance of the changes which are now proposed. They have shown us that the world today is closely knit and inseparable. This cosmopolitan tendency marches on, no matter what obstacles arise. Adoption of The World Calendar* will no doubt foster among the peoples of the world a new sense of international unity and further promote the universal brotherhood of mankind."

A summary of the open discussion in the Symposium shows that the scholars and leaders were in general agreement on four major points: (1) that China had produced a superior calendar far in advance of all other countries; (2) that for 3,000 years Chinese scientists had occupied themselves with efforts to improve the calendar; (3) that the Gregorian Calendar which China adopted in 1912 in the interest of world unity was far from perfect; and (4) that of all modern proposals for calendar reform, The World Calendar was the best and should be universally enacted, especially in view of the fact that it will undoubtedly prove "an instrument leading to a world state of peace."

The introductory address by Dr. Chu Chia-hua was a model of restrained eloquence. "The calendar began," he said, "as one of the earliest achievements of civilization; it marked man's first approach to understanding nature and the universe. It was the application of his knowledge of the heavenly bodies to human affairs.

"At the dawn of civilization, the first natural phenomena that attracted our ancestors' attention were the motions and changes of the sun and the moon. When they found that time could be measured according to certain fixed rules, they came to know what was a day, a moon-th, and a year. We may suggest that it was the necessity of recording solar and lunar changes which produced numerals; and with numerals we had mathematics, and then astronomy.

"The Chinese people had a very early interest in studying the calendar. The ancient Chinese classics recognized as a principle that 'to establish the calendar and to know the time is a most important work of the government.' The legendary Emperor Yao directed his astronomer Hsi-ho to 'study the sun, the moon and the stars, and reverentially bestow on the people the correct time.' Our early emperors and kings sought to strengthen their rule over the people by associating the crown with the calendar mysteries. When Yao was about to abdicate and transfer the throne to Shun, he said: 'The calendar of the heavens is embodied in your person.' Measurement of the days and years was an exalted ceremonial function, fit for kings and high priests.

"Royal interest in the calendar led to the very early development of mathematics and astronomy in China, though these sciences later made small progress because

* In 1937 the Chinese Association for the Study of Calendar Reform consulted 100,000 persons, and embodied the result of this exhaustive questionnaire in a report to the Chinese government, approved by the Ministries of Foreign Affairs, Railways, Finance, Communications, Industries and Interior. The report fully endorsed The World Calendar, stating that 81 per cent of the questionnaire results were favorable.

of our failure to develop a set of adequate symbols.*

"Our legends say that it was Huang Ti (the Yellow Emperor, whose consort invented the manufacture of silk) who made the first calendar, about 3000 B.C. Probably a foundation for his system was laid long before his time, because the motions of the heavenly bodies had been observed at a much earlier date. Emperor Huang Ti was followed by the Hsia and Shang dynasties, which probably reigned from 2200 to 1100 B.C. It is at this point that recorded history begins.

"As a result of the Anyang excavations, conducted by the Academia Sinica between 1928 and 1937, important discoveries have been made about the Shang civilization. We now know that a very advanced kind of calendar was in use during the Shang dynasty. This important contribution to history was made by Professor Tung Tso-pin, our first speaker.

"After his address, we shall direct our attention to the proposed World Calendar. In recent years, many inconveniences have been found in the Gregorian Calendar. It is a hope of the majority of people everywhere that a really good calendar, universally adopted, will be an important step towards a World State. And our present advanced knowledge of astronomy and the other essentials of a more perfect calendar, offers great possibilities toward finding a system that will be satisfactory to everybody. China is glad to recognize The World Calendar Association, and to have one of its affiliated societies in 36 countries.* We trust that today's symposium will draw more attention to this subject and will arouse public interest in it."

The address of historian Tung Tso-pin laid a fine foundation and background for the Symposium. He pointed out that as a wise and artistic people, the Chinese

*Conversely, Western nations moved rapidly forward in science with their development of adequate symbols. Between the years 1000 and 1500, the new Arabic numerals slowly displaced the cumbersome Roman numerals, and man's thinking leaped forward like an arrow sped from a bow. The early years of the Renaissance marked another advance in the use of symbols, with the advent of algebra, fractionals, logarithms, analytical geometry and the calculus. Acceptance of the present Arabic number system took place over a period of nearly five centuries. About the time Jamestown was settled, the last important addition was made; this was the invention of the decimal point. It may come as a surprise to find that our present system, as we know it, has been in use less than half as long as the period in which the usage of Roman numerals dominated civilization. Imagine having to compute percentage problems, such as taxes, using the laborious Roman system which represented simple quantities only.

*One of the leading Jesuit scholars in China, the Reverend Feliciano de Vicinay, reported to a Synodal Commission at Peking in 1936: "It would be quite simple to reform our present calendar in accordance with the 12-month plan known as The World Calendar. All that would be necessary would be to choose a year beginning with Sunday, and put the new system into effect. There would be hardly any perceptible interference with dates, but a great convenience would immediately result . . . China is interested in calendar reform because of the country's existing calendar difficulties, as well as the fact that the nation includes more than 500,000,000 inhabitants, nearly a third of the world's population. The Chinese people have two calendars, their ancient lunar system and a solar system that follows the astronomical periods exactly. It is true that officially the lunar calendar was abolished with the coming of the republic, and replaced with the Gregorian system. The Nationalist government worked hard to put this substitution into effect, strictly forbidding the printing and sale of the old calendar and refusing legal recognition to documents and contracts dated according to the ancient method. But the lunar calendar is still deeply imbedded in the customs of the Chinese people. The World Calendar would actually form a basis for gradual and general public acceptance."

have long been working with delicacy and skill to perfect "that fallible and extremely human instrument, the calendar, within which the time-span of human life has to be housed." Tinkering with the calendar is no novelty to the Chinese. During the three centuries of the Shang dynasty, the calendar was reformed at least three times. During the later Han dynasty (200 B.C. to 200 A.D.) six different calendars were in competition with each other. After the Han dynasty the calendar was altered dozens of times.

For the Chinese historian, it is essential to know the nature of the various calendars China has had, and the points at which new calendars were adopted, because without this knowledge he cannot establish the dates of Chinese history. By studying the ideographic characters scratched on the 100,000 ox-bone "oracles" and tortoise shell plastrons which are one of the great twentieth century archeological finds of China, scholars like Professor Tung Tso-pin have been able to push the dates of Chinese history back several centuries. As late as 1922, Bertrand Russell, the English philosopher, claimed that 776 B.C. was the first verifiable date of Chinese history. Professor Tung's ten-year study of the bone oracles has proved that recorded Chinese history goes back at least to 1384 B.C., and that at this remote period, the Chinese calendar was already using the principle of intercalation on a highly scientific basis.

Not content with studying the calendars of China's 3,300 years of recorded history, China's scholars have examined with eagerness the calendar calculations of other peoples. As a result of their studies, they express warm admiration for the systems of the Egyptians and Mayans, but find the calendar systems of the Babylonians, Greeks and Indians confused. It is Professor Tung's opinion that these "wild" calendars reflect a lack of intellectual unity and clarity in the societies in which they originated.

This is an interesting observation. It is probably true that calendars, like other products of a nation's culture, reflect the national temperament. Study of Chinese calendars shows that this is indeed the case. Two characteristics in the Chinese handling of the calendar are outstanding. First, like good scientists, the ancient Chinese were interested in gearing their calendars to objective events like the solstices (whose appearance they measured with precision instruments), rather than in making the motions of the heavenly bodies fit into some theoretical human calendar scheme. Second, the Chinese calendar makers dealt in a longer time perspective than that used by other peoples. What they wanted to produce was a calendar that would operate smoothly not only over hundreds, but over thousands of years. They therefore invented a Sexagesimal Cycle of 60 days, which was unaffected either by the lunar month or the solar year, and which has operated without "a day of error or a break" for 3,260 years. The Sexagesimal Cycle is regarded as the backbone of the Chinese calendar and one of the important elements in Chinese civilization.

China has the right to feel proud of its calendar makers. Speakers addressing the Formosa Symposium noted that the Chinese were more precise than other peoples in setting the beginning of the lunar month on the day *before* the new moon is visible; that they used the principle of intercalation a thousand years before the

Babylonians; and that they had established the fact that the solar year has precisely 365.242 days 1,300 years earlier than the Romans.

"With so distinguished an intellectual history of calendar making behind them," said Astronomer Kao Ping-tze, "it is not astonishing that contemporary Chinese display a lively interest in further improvement of the calendar. This interest is increased by the fact that they have not found the Gregorian Calendar very satisfactory. During the two decades which followed its adoption by the Chinese in 1912, Chinese scholars have made thirteen different proposals looking to reform."

The Chinese are committed to the desirability of having a uniform world calendar in the interest of world unity. Moreover they are tolerant enough not to insist that The World Calendar follow a Chinese pattern, although they believe that many elements of their calendar system are admirable. However they do have very definite ideas as to what the characteristics of a universal calendar should be.

In the opinion of the members of the Chinese Association for the United Nations attending the Formosa Symposium, a new calendar should be "simple, economical and comprehensible." Their next principle is that it should be "*free from religious bias.*" This means it must not be tailored merely to fit the Christian faith. Further it should seek to combine the ideas of the East and the West. On this point, Professor Kao Ping-tze said:

"There is an important difference between our proposals and those of the Western countries. The Chinese seem to be more interested in the time of the beginning of the year and also in the harmonious distribution of the quarters and half-years, while the chief concern of the Western world seems to be to keep the week* in harmony with the month or the year . . . The Chinese proposals have also laid more emphasis on the theory of the motion of the heavenly bodies, while Westerners seem to set out to reform the calendar from the point of view of social or economic convenience. When we discuss calendar reform, we immediately think of astronomy and the seasons; but the Westerners seem to have discarded such considerations and laid their emphasis on such problems as how to distribute wages or how to make full use of machinery.

"That is why the United Nations has assigned the subject of calendar reform to the agenda of the Economic and Social Council. This is the tendency of Western countries and we must keep it in mind."

Asked to choose between the three concrete programs proposed by the League of Nations in 1930, Professor Kao said: "From my personal point of view, the thirteen-month calendar looks a little freakish. Thirteen is a number divisible neither by 2, by 3, nor by 4; it will not make good in statistics or accounting. If the three proposals are put to the vote, I believe the second proposal—The World Calendar—will have the support of everyone. The essence of The World Calendar is its stability; it gives us the same pattern every quarter, every year."

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*From the 1937 report of the official Chinese committee: "As far as China is concerned, the week is a foreign product. Although it has gained wide usage of late, it is not as important in the East as in the West. The Chinese habit is to divide the month into three periods of ten days each." Speakers at the 1951 Symposium echoed these statements. One scientist observed that "the Chinese do not think much of the week," and another said: "My proposal is that we shall have no more of the week, but divide the month into three decades."

REVIVAL OF INTEREST IN ENGLAND

By Harold Watkins, London

ADVOCATES of calendar reform in England are again becoming vocal. They are hoping that the new government, under Winston Churchill, will have something constructive to say about this subject.

One of Mr. Churchill's lieutenants, in reply to a question, said recently that in his opinion the only serious obstacle to calendar reform was "public apathy." This, of course, is an old British trait, and it was evidenced long ago in the 170-year delay between Pope Gregory's improvement of the Julian calendar in 1582 and the British acceptance of that reform in 1752. Charles Dickens devoted many pages to satirizing this dilatory quality in the British character—one of his most amusing passages referred to the old wooden "tallies" which the Treasury used for accounting purposes up to 1835, notwithstanding the invention of pens, paper and pencils—until finally the accumulation of dried sticks caught fire and led to the burning down of the Houses of Parliament.

Great Britain is not the only nation which is currently guilty of "apathy" in respect to calendar reform. The same handicap seems to have gripped the statesmen who represent the United States at the United Nations. American delegates have shrugged their shoulders whenever the subject has come up, and have replied vaguely that they are not aware of any "popular mandate" for a change in the calendar.

On the other hand, many of the smaller nations are enthusiastic in support of The World Calendar. Canada is at the moment the most active on its behalf. France appears to be more favorable than at any time in the past thirty years. The Latin American countries are keenly interested. Greece and Turkey are supporters of the change. Italy is on the fence. Switzerland, Belgium, Holland and the Scandinavian nations have always regarded a new calendar as a desirable development.

The international situation, then, is ripe for a positive attitude on the part of England and the United States. If this can be achieved, calendar reform can easily be a fait accompli within the next few years.

Informed opinion in England is undoubtedly favorable. A well-known journalist who lately studied the situation, summed it up in the following paragraphs:

"It is difficult to think of a reform more far-reaching in its general benefits and

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Editor's Note: Born near Birmingham, England, the author spent his teen-age years in Canada, returning to England to enlist in World War I. Later he was assigned to work on historical war records, where his exceptional talent won him the award of M.B.E. Since that time he has written extensively for the press and radio, with several important books to his credit. He is now engaged on a volume devoted to the history of calendar reform.

yet more simple to bring about than this proposed revision of our higgledy-piggledy calendar. Nobody could lose by it, since it would deprive no one of anything, and everyone would in some degree benefit, if only through the simplification of his personal program and budgeting.

"Since the industrial revolution it has been evident to British business and labor people that our present calendar leaves something to be desired. A good deal of sober thought has been given to studying the defects of our time system, and the ways in which these deficiencies might be remedied. What is needed is an adjustment of the time intervals, so that months, quarters and half-years will be more nearly equal—removing forever the need for everybody to memorize that silly but essential rhyme 'Thirty days hath September, April, June and November.' Along with such an improvement, the chief requirement is a stabilization of weekdays, so that the same month-date always falls, year after year, on the same weekday."

It is not always realized what queer tricks the calendar plays with days and dates! For example, in 1947 the month of January had four Saturdays and four Sundays; in 1948 five Saturdays and four Sundays; in 1949 five Saturdays and four Sundays; in 1950 four Saturdays and five Sundays; in 1951 four of each again. No wonder the business statisticians throw up their hands when they are asked to compare January this year with January of preceding years. One of these statisticians, attempting to explain the incomparability of his figures, burst into a demand for an improved calendar, and added: "It is only fair to look on the calendar as one of the tools man fashioned in the distant past for his daily use—a tool that has been improved by various users, but not yet perfected for its purpose."

He went on to state precisely the items that he felt might easily be corrected. "At present," he said, "we start with a year that has a certain number of days and an awkward fraction; we have days that will not divide into that figure without a fraction; weeks that will not divide into either months or years without a fraction; and months that are most awkwardly dissimilar. These awkwardnesses add an avoidable complexity to life, without any compensations. Four of our months have 30 days, seven have 31, and February has either 28 or 29. The first half-year of 1951 had 181 days, the second half 184 days. The quarters consisted of 90, 91, 92 and 92 days respectively. The number of weekdays in a month varied from 24 to 27. And because the figure 365 is not integrally divisible by 7, no date next year can possibly fall on the same weekday as it does this year."

The business world will no doubt agree with the statistician's grouse. Even the staid *Journal* of the London Chamber of Commerce says: "Business men have long recognized the advantages which will be gained from adoption of a rational calendar. One cannot but think that the reform will come sooner or later; and so far as business is concerned, the sooner the better."

Obvious as are the defects of our calendar, the world has generally been reluctant to tamper with it. Still over the years there has undoubtedly been growing an increasing sense of the need for a new and simple adjustment to modern requirements. Among those who have given any thought to the matter it seems obvious that in the

course of time, reform is inevitable. And the plan which now dominates the field is the one which has come to be known as The World Calendar. Since 1937 when the League of Nations officially polled its members and found 14 nations favoring this proposal, and no votes for any other plan, it has been accepted as the reform which would eventually be adopted.

Almost throughout its life, the League of Nations had this matter of calendar reform under consideration and investigation. Had not the war intervened, it is reasonable to believe that its preliminary work would have resulted in obtaining universal agreement and fixing a date for bringing the change into operation. That date would probably have been 1 January 1950, when the old and new calendars co-incided. A similarly favorable moment for adoption will occur in 1956, and strenuous efforts are being made to organize the adoption of the reform in that year through the United Nations.

There are many people in England who would like to see this happen. Their position is that a revised calendar can do no harm, but only good, in advancing at least one small step toward the unity of the world. For improvement of the calendar is the sort of reform in living which will go to show the innate reasonableness of man.

SUPPORT FROM JAPANESE BUSINESS

東商發第2155号
昭和26年10月20日

日本歷法協會
御中

東京商工會議所
專務理事 吉阪俊藏

世界歷に関する件

かねて貴所より御申越のあつた世界歷の件については世界各國が挙げて実施せられるにおいては誠に結構なことでその意味で御賛成申上げます
以上御返事申上げます

Tokyo, 20 October 1951. Re: The World Calendar. We fully realize the merits of The World Calendar from a study of its details, and hereby endorse its adoption by Japan, provided the other countries of the world approve it.—Tokyo Chamber of Commerce and Industry, by Shunzo Yoshisaka, Managing Director.

HOW TO TALK FOR A NEW CALENDAR

By Edward F. Flynn

INCLUDED in the 4,000 speeches and addresses I have made across the United States and Canada during the past fifty years have been more than 500 on The World Calendar. For a long time I have concentrated largely on this topic, particularly with Rotary Clubs and other business and professional groups. It is a subject that interests them, and one on which most listeners are not well informed. I feel that I am doing them a definite service, both in calling their attention to the inadequacy of the present calendar and in selling them a program which, once accepted, will make their life simpler and more effective.

The World Calendar is not an easy commodity to sell in a 20 or 30 minute speech. There is a lot of ground to cover—a certain amount of the background history of the calendar, a description of its most annoying deficiencies and the reasons why they exist; and finally an explanation of the way they can be remedied and the enormous savings that will result. After this spade work, the audience must be told where calendar reform now stands, how it can be enacted, and what each individual or group can do to promote the cause. That's a fairly large order for any public speaker—it requires careful organization of his material if he is going to be lucid and persuasive, leaving no blank spots or unexplained hiatuses.

On the other hand, any average person can quickly get enough knowledge of calendar reform to meet the requirements for making a speech that will hold the attention of listeners. The *Journal of Calendar Reform* for September, 1951, contains the text of an address by Ernest R. Dayton of Middletown, Connecticut, which he delivered before one of his local service clubs. His experience is, I think, typical. "It had occurred to me," he writes, "that here was a good topic for one of our luncheon meetings. But I was astonished at the enthusiastic reception it received. This little talk aroused a lasting interest among my listeners. . . . My text is a good example of a treatment which proved keenly interesting to an uninformed audience."

Because of my long experience in handling this subject and my considerable success in winning converts to the cause, I have been asked to write down for publication some of my observations as suggestions to others who may have the opportunity or the desire to do some public speaking in behalf of The World Calendar.

By way of introduction I may say that I have always regarded public speaking as the greatest of the arts. And the longer I live the more highly I have come to regard it! I am quite sure it is the single gift most to be coveted by man. The Greek philosophers maintained that "to be an effective public speaker is to pos-

sess the highest faculty given us by the gods. . . . An orator is a great artist, and more—for he must have wit, knowledge, wisdom, fancy, imagination, sincerity, integrity, grace and charm." King Philip of Macedon once said of Demosthenes and his silver tongue, "Had I been there, he would have persuaded me to take up arms against myself."

The effective public speaker is not a mere entertainer. He must have a present practical purpose to accomplish. If he fails to achieve it, he fails utterly and altogether. His objective is to convince the understanding, persuade the will, and set aflame the heart of his listener. He speaks for a present occasion. If his arrow misses its mark, he is a failure. What he says must accomplish the purpose of the hour. Carlyle, profoundly wise in his deep-rooted cynicism, gave this advice to his contemporaries: "No man has a right to speak in public until he has something to say so meaningful and compelling that his address will result in a deed—a thing accomplished, now or after a while."

The qualities most needed in a speech are those which make it "persuasive" and "convincing." If it has those qualities, nothing else matters. The speaker can accomplish what he wishes. He may not be an "orator" in the hi-falutin sense of the word, but everybody will have to admit that "he can make a fine talk."

To be a good speaker, one must be natural. He must be himself, with no imitations of anyone else in manner, gesture or delivery. Textbooks and classroom instruction may help, but in the long run experience is the best teacher. A great orator once wrote to me, when I was a young man: "Take advantage of every opportunity afforded you to speak before a group of any kind. And remember it is easier to talk to a large crowd than a small one, because your audience is for you and will help you with applause if you are persuasive and convincing; if you have 500 or 1,000 people encouraging you and giving you their undivided attention you will do better than with a small group of 50 or 60."

After nearly 50 years of public speaking, I fully endorse his remarks. I have spoken before audiences all the way up to 10,000 people, and the bigger they are, the easier my job seems to be.

However, the size of the audience is not particularly important. At least, the speaker has no control over it; therefore it doesn't figure much in his preparation for the occasion. What he must worry about is his subject matter, his delivery and his timing.

His material must be carefully prepared. If he speaks without notes, he should have a complete mental outline of his sequence — introduction, argument and conclusion; and the more important portions of his talk should be memorized. If he uses notes, he should be sure to have a lectern or speaker's stand; the pages of his text should not be fastened together, nor should they be held in his hand—he should be able to slide them along the lectern without having them obtrusive.

Should he speak slowly or rapidly? That depends entirely on what comes natural to him. I have heard some fine speakers whose rate of delivery was no more than 100 words a minute. For myself, I happen to be a rapid-fire talker —in fact, for a good many years I was credited with the fastest delivery on the lecture platform, with speeds up to 350

words a minute. At conventions, I have frequently been too fast for the stenotype operators, who are not trained for any sustained delivery above 250 words a minute. Yet very seldom does anybody complain that I speak too rapidly, and then only when the room has notoriously bad acoustics. That's because I am *naturally* a fast speaker, and have trained myself over the years to a sharp and incisive diction that makes each vocal sound clear and distinct.

I am not advising others to imitate my rapid-fire method, which happens to be a sort of individual trade-mark that my audiences never forget. It came to me quite by accident—oddly enough its beginnings were in my school days at a Catholic academy in Faribault, Minnesota, where the Dominican sisters used to call on me, whenever visitors came around, to display my skill as a reader. I had already developed a resonant voice and a staccato style, with good enunciation and expression, which fascinated our occasional guests. I still remember how I enjoyed those little triumphs, and they of course influenced me into emphasizing speed and diction as I grew to man's estate and eventually progressed into the law and into active participation in many civic causes. Fast speaking became natural with me. And the most important factor in all effective public speaking is to be natural.

Should a speech on calendar reform have any humor? Should it sparkle with anecdote? Well, that depends largely on the occasion. If the meeting is informal, anecdote and humor are quite in order; but they should not be overdone. The three greatest speeches ever made are sober efforts, unadorned with tinsel of any kind—Christ's Sermon on the Mount, Paul's Speech to the Athenians on Mars Hill, and Lincoln's Gettysburg Address. Of course those three speeches were made on solemn occasions, when humor and anecdote would have been undignified and inappropriate. The same rule applies to calendar reform in forums like the United Nations, the halls of Congress or the British Parliament.

But in less formal gatherings, a speaker will be more effective if he lightens his presentation with a few apropos stories. The history of the calendar bristles with them. I recall the keen interest which a college professor aroused in an audience of students when he dramatically described the way Julius Caesar became interested in calendar reform. He explained that the Roman general found himself in Northern Gaul, putting his army into winter quarters in the midst of a blustering snow storm—and was greatly annoyed to find that the wandering Roman calendar was three months off base and was pointing at Spring instead of Winter. "This has got to be fixed," said General Julius, and he kept the matter on his agenda for several years, until finally he became head-man in Rome and carried through his purposeful program of calendar reform. The confusion of those preceding years was later summed up by the French Historian Voltaire in these words: "Roman generals always triumphed, but they never knew on what day they triumphed."

Novices at public speaking often say that "the beginning is the toughest part." Perhaps they will be helped by the prescription given many years ago by Edward Everett Hale, one of the greatest platform figures of the past generation.

He said: "Before a speech, I usually have somebody beside me to whom I am talking. Our conversation is natural and easy. If I can carry along into my public speech that same conversational flavor and naturalness, I know my opening will be successful. So I insure that result by expressing to my neighbor in conversation the thought which I intend to use at the beginning of my address. Then when I rise, I start off something like this: 'I was just saying to Mr. Jones that—.' Thus I make the last words of my private talk the first words of my public address, and a natural, conversational opening is assured."

My first advocacy of The World Calendar on the public platform was in 1931. I had seen the first issues of the *Journal of Calendar Reform* in the early part of that year, and had become a convert to the idea. At the time, I was lecturing frequently on "Creating a Streamlined World," and I added a few paragraphs to that lecture, pointing out that our current calendar was out-of-date and that the correction of its deficiencies was important to any effort toward a Streamlined World. This part of my lecture was well received, and before long I began getting requests for a talk exclusively on the calendar. So I prepared a 40-minute address on the subject, and tried it out, with success, at a few nearby Rotary Clubs.

My connection with Rotary was of long standing. I had organized a Rotary Club in Devil's Lake, North Dakota, while I was practising law in that enterprising county seat. At the time, I was president of the local Board of City Commissioners, and later City Attorney. When I moved to St. Paul in 1923 as a member of the legal staff of the Great Northern Railway, I took my Rotary membership along with me, and was promptly elected a district governor. Two years later I became a member of the Rotary International Board, largely as a result of a speech I made at the Denver Convention. My connection with Rotary International has been continuous since that time, and I have spoken before Rotary Clubs in every state of the Union except Florida, Kentucky and South Carolina.

Along with these audiences, I have discussed calendar reform in many other groups. I suppose the most important occasion was the Town Hall in New York, which is America's foremost forum for the discussion of current affairs. The program here requires a full hour's lecture, followed by questions and answers.

As I hastily review my 500 appearances across the country on the subject of "Why We Should Adopt The World Calendar," I feel that my talks have been on the whole highly successful. I can think of no more than three or four occasions where the audience has included a group of slow thinkers who did not understand and therefore could not enthuse about the proposals for a better calendar. With these occasional exceptions I have found Americans and Canadians alike in accepting my arguments and endorsing my proposals. The best audiences I ever had were in California, and I have returned to some of these clubs four or five times.

It is my considered opinion that The World Calendar is one of the best subjects a public speaker can take for an address to the average American audience. His listeners get from him a wholly new viewpoint on a matter which concerns them continuously in their every-

day life. And it happens to be a subject that is well-adapted to a viva-voce presentation. A speaker can make it clear and convincing, whereas the printed word somehow has a greater difficulty. There are many subjects, I believe, in which the newspapers and magazines cannot be as effective as the lecturer.

There are people who say that public speaking has had its day, that the newspaper and the radio have taken its place. This to me is arrant nonsense. Public speaking will never decline while men have ears to hear. Speaking is nature's chosen method of instruction: it begins with mother to child, continues with teacher to pupil, and still carries on throughout adult life. The most powerful public opinion is mouth-to-mouth propaganda—a living, moving influence which spreads from man to man, and from neighbor to neighbor, fitting into itself the vitality of the personalities of all.

When I retired from my active connection with the Great Northern Railway in 1945, I had the choice of spending my unaccustomed leisure in writing for the newspapers, or lecturing. Some of my associates thought I should stick to journalism as a medium which would reach more people than my voice. One friend told me, "Through newspapers and magazines you can have an influence a thousand times wider than through any conceivable program of public speeches." Perhaps he was right, but I think not. Because a man can reach 100,000 people through a big-city newspaper, there is no reason why he should not also reach 1,000 people with a speech. The printed word is widespread, no doubt, but it is more indirect, impersonal and hence unimpressive. The spoken word is direct, personal and almost hypnotic in its force. I have always felt that the best way to arouse the press is to say what you have to say in a speech—which the newspapers will be glad to report.

For myself, I get a much greater personal satisfaction out of public speaking than I do out of writing. No writer has any echo so intoxicating as the applause of a visible audience and the stimulation that comes through the exchange of spirit between a speaker's eye and the answering eyes of his hearers. The power of public speaking is perhaps a transitory intellectual influence—because it is largely dissipated when the speech is concluded—but while it lasts it is the most concentrated and intense of all forms of mental action and the most stimulating, both to the speaker and the listener.

When The World Calendar is finally adopted, it will owe its success in large part, I believe, to those who have labored for it as public speakers before clubs, forums and convention audiences.

SPECIAL HELPS FOR SPEAKERS

As Mr. Flynn points out in his article, the subject of calendar reform is an attractive topic for speakers at service clubs, forums and debating groups. In response to many requests, The World Calendar Association has prepared a portfolio of material for speakers, covering the many varied facets of the subject and giving any speaker the foundational information that he needs to present his subject adequately and with complete confidence. Suggestions are also included for printed material which can be conveniently distributed to listeners, and which is available without cost from the Association. A postcard request—"Please send me your speakers' portfolio"—will bring this material.

FORWARD MARCH AT STOCKHOLM

CALENDAR REFORM was prominently on the agenda of the Sixth Plenary Assembly of the World Federation of United Nations Associations, held in Stockholm during the last week of August, 1951. Approval of The World Calendar came from the delegations of China, Cuba, Argentina, Panama, Chile and Germany. The Netherlands delegation stressed the "vast importance" of the subject and urged appointment of a "Study Committee" of experts in economic, financial, religious and social affairs, to consider all phases of a change in the Gregorian system. Australia reported an active interest, but explained that their official consideration of the question had not yet been completed. Israel and the United States made negative reports.

The most enthusiastic endorsements came from China and Germany. The Chinese delegation submitted a printed report of 44 pages, with a recommendation that the Economic and Social Council of the United Nations should deal with the subject at its Thirteenth Session in July, with a view to international adoption. Heinz Gremmler, Secretary of the German associate, reported: "I have repeatedly taken up this subject in Germany and have written many articles about it. The World Calendar has our full approval, and we hope it will come into force in 1956."

Cuba presented a resolution voted at Havana in April, urging international adoption of The World Calendar. Panama and Chile repeated their previous endorsements. Argentina declared: "We find the idea both sound and practical. We are delighted to give our approval."

Although no affirmative action was taken by the Assembly, the delegates approved the reports which have been thus far received. The general sentiment seemed to be that further consideration of the subject would be forthcoming from many other countries. The Secretary-General had already stated that "several members of the Executive Committee have expressed their interest" in calendar reform, and it was the unanimous decision of the Committee that the proposals should be carefully studied by all member Associations.

The World Federation of United Nations Associations has seven honorary presidents, representing England, France, China, Poland, Denmark, India and Cuba. Of these seven world leaders, two are enthusiastic supporters of The World Calendar—Dr. Chu Chia-hua of China and Dr. Cosme de la Torriente of Cuba. The latter recently wrote to The World Calendar Association (17 November 1951): "I shall be happy to offer your organization my cooperation in connection with the reform of the calendar." Dr. Chu Chia-hua's views are fully reported in an article on Page 156 of this issue of the *Journal.*

Since the close of the Stockholm meeting, an endorsement has been received from Manila which may induce action by the United Nations Association of the Philippines.

FROM AN ASTRONOMER'S VIEWPOINT

By Robert G. Aitken
Director Emeritus of Lick Observatory

One of the world's most distinguished astronomers, head of Lick Observatory for the past 21 years and dean of the astronomical department at the University of California, died in Berkeley, California, on 29 October, at the age of 86. His discovery of 3,100 twin stars during a 12-year survey of the skies was his most spectacular contribution to science; he was also a specialist on Mars, having stirred the astronomical horizon in 1924 with his proof that the planet's temperature could support life. Professor Aitken had been an ardent supporter of The World Calendar since its inception, and welcomed every opportunity to speak or write in favor of its adoption. The following article is abstracted from several of his letters, speeches and essays. His literary style was always brilliantly colloquial and provocative.

OUR present calendar, particularly in its role as a social and economic timekeeper, is sadly out of step with our vaunted "practical" civilization. This has been pointed out many times, and its defects need not be listed again. The plan of The World Calendar has been widely circulated. It is a scientific document; it is simple and perpetual; it meets all social and economical as well as astronomical requirements. I see no good reason why it should not be adopted.

Astronomers, with their eyes on the whole universe, have a uniquely impartial viewpoint from which to consider calendar problems. Think of the tribulations of calendar makers on the planet Jupiter. Not only are there about 10,500 days in the year, but the number of days probably varies with the latitude and at the equator may be fully 90 greater than in high north and south latitudes.

Even with the inhabitants of Mars the calendar problem is bad enough. The planet's year has 668.6 days. Three different schemes for a Martian calendar have been suggested. The inhabitants, if any, might have four years of 669 days each, followed by one of only 667 days; or they might have four years of 668 days each, followed by one with 671 days. By either plan they would have 3,343 days in five years, which is what the actual rotation and revolution periods require. But a third alternative is probably more practical—to have the Martian years run alternately 668 and 669 days, and then insert an extra leap-day every tenth year to care for the odd one-tenth of a day. This would keep dates in step with the seasons for more than 10,000 years.

The year on Mars might well be divided into quarters of 167 days each. There is nothing on Mars that corresponds exactly to the Earth's lunar period (which gives rise to the monthly and weekly subdivisions of the Earthly calendar). Mars has two

moons, the outer of which makes one complete revolution in about 1¼ of our days, while the inner one revolves nearly four times as fast. A Martian calendar might well provide a year with 16 months of 42 days each, and these months might be further subdivided for convenience into six weeks each.

A man from Mars, if he came to Earth and examined our hodge-podge calendar, would be likely to express his surprise that the human race, which prides itself upon its progressiveness, had so long been content to put up with this situation, and that it should be so slow and hesitant about adopting the revision proposed by The World Calendar Association, a revision that would so obviously improve and simplify—particularly since the adoption of the new system could be effected with so little inconvenience to anyone. He would listen with impatience to any explanation about the power of tradition and the reluctance of the conservative element to give up an old custom or tradition in favor of a new one, even though the new one offers definite advantages. This, he would contend, is unreasonable. It is all right to "hold fast to that which is good," but why should anybody hold fast to something that is not so good and that can so easily be made better?

Of course it would be most convenient if our year contained an exact number of days, and if that number were exactly divisible both by 7 and 12. But Dame Nature, if she be the responsible party, has been culpably indifferent to commensurability in the rotation periods and revolution periods of the Earth and of all the other planets. Happily this is of no consequence except for Mars and the Earth, for as we know, the other planets are uninhabitable, or at least uninhabited.

* * * *

Improvement of the Earthly calendar has been a live subject of discussion from prehistoric times. It all began with that period in man's climb upward toward what we are pleased to call civilization, when he forsook his nomad wanderings and began the practice of agriculture, and the building of more or less organized communities. Earlier he had felt no special need for a definite standard of reference to keep account of his business transactions and sundry appointments. When that need did arise, he found his standard on hand in the apparent motions of the sun and moon.

Long centuries before, when men were still nomads, the wiseacres of those who roamed the river lands of Egypt and Mesopotamia had marked the courses of the sun and moon among the stars. They had noted that it took the moon about 28 to 29 days to run through its cycle of phases, and the sun about 365 days (or about 12 lunar changes of phase) to pass from vernal equinox back to vernal equinox again. They had also noted that the moon needed about 7 days to pass from one phase to another, and they gave each day of the seven a distinctive name—Sun-day, Moon-day, or names drawn from the tribe's earlier myths and legends.

Having now the approximate length of the year and of the month, the next problem was to combine them in one cycle that would repeat itself endlessly. Efforts to solve that problem encountered a fact that baffled calendar makers through the centuries: the lengths of the month and the year, expressed in solar days, are incom-

mensurable quantities and nothing that man can do will alter the fact. The astronomer cannot help, he cannot change the velocities or orbits of the celestial bodies, he can only measure and compute. This he has done with ever-increasing accuracy, until the precision of his data far exceeds the needs of the calendar maker. For the latter's purpose it suffices to know that the time from one equinoctial passage of the sun to the next (the so-called "tropical" year) equals 365.242 days, and that the length of the ordinary month from New Moon round to New Moon again is 29.531 solar days.

A good calendar, however, is one in which the tabulated date of the vernal equinox falls invariably on the day when the sun reaches the true equinoctial point in the heavens. It was found that this could be accomplished reasonably well for a short period by the use of intercalary days. In fact, the whole history of the calendar down to the middle of the first century B.C. (whether we follow the Mesopotamian or the Egyptian efforts to establish a sound system) is the story of more or less successful intercalation. The results were mostly lamentably unsuccessful; so that when Julius Caesar came into power, the computed date of the equinox was 80 or 90 days ahead of the true date, and the whole calendar was a mess.

Caesar decided to scrap it and start anew. To this end he called upon an expert for advice, as other rulers have done before and since. Caesar differed from others, however, in that when Sosigenes, the expert, gave his advice Caesar studied the recommendations carefully and then acted upon them! That indeed is a course which may well be urged to some of the great powers and leaders of the present day.

The Sosigenes recommendations and instructions were drastic, it is true, and might have given pause to a lesser man than Julius. But drastic action was, so to speak, Caesar's long suit, and once he had satisfied himself that the cards were genuine, he played his hand masterfully. As Sosigenes had recommended, he decreed that the calendar's vernal equinox should always fall on 21 March, and that the length of the year should be precisely 365¼ days. Then, to combine these two decrees successfully, he adopted what Sir John Herschel describes as "Sosigenes' neat contrivance" of having two artificial years—one with a length of 365 days, to hold for three years in succession, and the other of 366 days, to apply to the fourth year and bring the average of the four to 365¼ days.

What Caesar said became, ipso facto, law. The new calendar went into effect as ordained, throughout the Roman Empire. Unfortunately, Julius himself was assassinated about a year later, and the men to whom the care of the calendar was then entrusted did not know what it was all about. They misread the rules, for they could not count, they could only add. They therefore began adding one day in three, instead of one in four years. Their error was eventually brought to the attention of Augustus, who also being an Emperor, rectified matters by a simple order. Thus remedied, the Julian Calendar remained in force until the days of Pope Gregory XIII.

It might still be in force except for the fact that heavenly bodies refuse to obey even a Caesar. The sun insisted on coming to the vernal equinoctial point at regular intervals of 365.242 days, instead of precisely 365.25 days, as ordained. The difference may have seemed to Caesar as negligibly slight, but it was cumulative and by the

16th century it had amounted to ten days, an "intolerable error" to the leaders of thought in those opening days of new-born science.

They began to petition the rulers of the Catholic Church, the only power whose orders ran across national boundary lines, to correct it, but did not succeed until 1582. Then Pope Gregory ordained that the last day on which the Julian Calendar might be used officially in his jurisdiction would be 5 October 1582; the day following would be known as 15 October, the first official date of the new Gregorian Calendar. This would set the calendar straight; and to keep it so, centennial years thereafter were to be leap years only if their numerical figures were divisible by 400. Thus 1900 was not a leap year, 2000 will be. With these changes the calendar would continue to tell the truth for more than 3,000 years.

Slight, relatively speaking, as these proposed changes were, they raised a violent outcry throughout Europe. It soon subsided in Catholic countries, but held on long in lands that did not owe allegiance to the Pope. In England and the American colonies, it did not disappear until after an Act of Parliament decreed that 2 September 1752, should be the last date for official use of the Julian Calendar and should be followed by 14 September of the Gregorian Calendar.

For 170 years then the champions of the Julian and Gregorian Calendars had disputed and argued, to the annoyance of later chronologists. Advocates of both systems were forced to adopt the custom of adding O.S. ("Old Style," for Julian) or N.S. ("New Style," for Gregorian) to dated letters and documents.

If it took 170 years and more to get the simple and obviously meritorious Gregorian reform adopted internationally, how long will it take to enact the equally simple and worth-while World Calendar? Let us hope we have grown wiser with the passing years and can attend to this important matter with speed and unity. Already 117 years have passed since the Italian Abbé Mastrofini initiated modern calendar reform. Surely we should proceed in this important matter with speed and unity.

A Happy Year to You—in Nineteen Fifty-two

(A New Year's card, sent out by the President of The World Calendar Association)

Within The World Calendar there is no conflict. The harmoniously integrated time-units, each making its own contribution, come together as *one* with every concluding year, blessed by the annually observed Worldsday that links the old with the new in one continuous rhythmic flow of time.

As is The World Calendar, so may our world become an harmonious *one world.* The various nations and peoples, each making its own contribution, will become vital integrated forces for a united and peaceful world, blessed with the Creator's Light and Love shining upon and uniting all in a universal tie of brotherhood.

The World Calendar is a forerunner of greater stability in our lives and days.

ELISABETH ACHELIS

CANADIAN BUSINESS APPROVAL

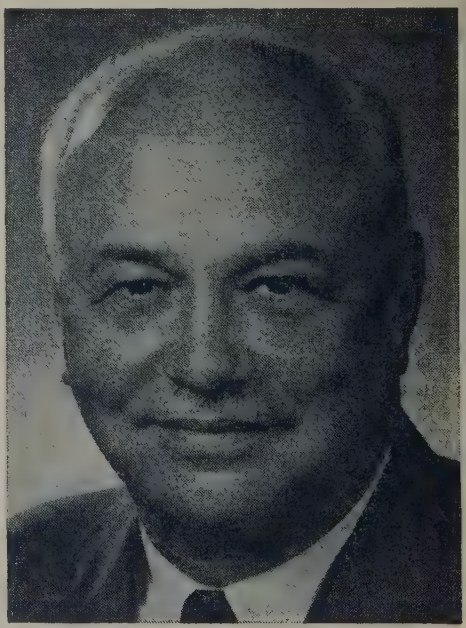
By Jerome Schwartz

ADOPTION of The World Calendar was urged in a resolution passed by the 22nd annual convention of the Canadian Chamber of Commerce held at Quebec, 29 October through 1 November 1951. The motion to approve The World Calendar was carried without a single dissenting vote by representatives of the 700 local Boards of Trade and Chambers of Commerce comprising the national organization.

This action was followed on 20 November by a similar vigorous endorsement from the Canadian Manufacturers Association.*

Prior to the plenary session of the Chamber of Commerce convention, the resolution for calendar reform was presented at a marathon session of the organization's National Policy Committee, which dealt in detail with the many urgent economic issues facing Canada.

Although there was no opposition of any kind to the calendar proposal, the convention which passed it was by no means in a rubber-stamp mood. Considerable debate developed over other issues, including Anglo-Canadian trade, Canada-United States relations, development of oil resources, pricing practices and other matters in which the Dominion's business men have a stake. The unanimity with which the delegates acted arose presumably out of the fact that many of the local bodies had already studied The World Calendar Association's proposals and had instructed their representatives

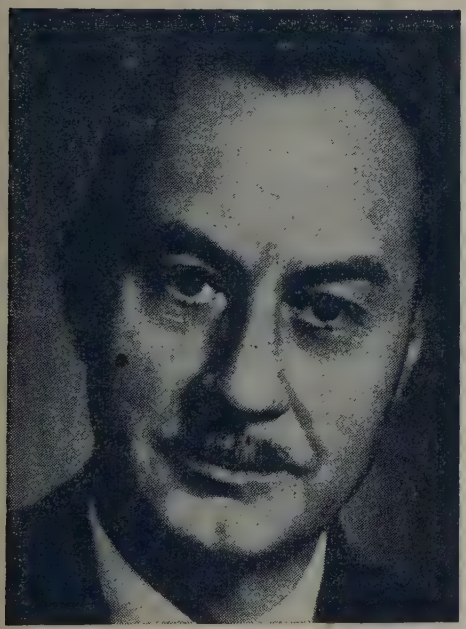


R. B. Perrault, new president of the Canadian Chamber of Commerce, is a McGill graduate and an industrialist with interests in automobiles, textiles and cellulose.

*During the first two weeks of April, organizations representing more than 83.5 per cent of Canadian organized labor asked the Government to take steps to advance adoption of The World Calendar. The new calendar plan has also been endorsed by the Canadian Retail Federation; the Canadian railways have signified that the new system is acceptable to them. Canada's advocacy of calendar reform has been enthusiastically supported recently by leading newspapers of Canada.

to cast votes in favor of them. Mr. Gilbert LaTour, directeur general, Chambre de Commerce de Montreal, informed the press that his organization had approved The World Calendar just the week before. Affirmative action had also been taken recently in component groups of the national Chamber in such large centers as Toronto, Vancouver, St. John and Regina.

Spadework done by supporters of calendar reform was an important factor in securing prior endorsements from the Montreal, Ottawa and Quebec Boards of Trade, as well as the Chambers of Commerce in Winnipeg and other cities. The World Calendar advocates had received promises of active support from many leaders. Especially helpful was the report of the special committee appointed by the Canadian Chamber at the request of the Board of Trade of the City of Toronto.



Hugh Crombie, head of the Canadian Manufacturers Association, urges Prime Minister St. Laurent to support The World Calendar in deliberations of the United Nations.

Advantages of a balanced perpetual calendar were recognized by the Chamber's Committee. Terming The World Calendar "a constructive improvement" over the Gregorian system, the preliminary studies had emphasized the stabilizing effect the new time-reckoning would have in various areas of business. Particularly interesting, the Chamber noted, were the advantages in planning and scheduling. Here the business man would benefit because once plans and schedules are adopted, they need not be revised each quarter or each year because of calendar idiosyncracies. The perpetual day-and-date feature of The World Calendar and its quarters of equal length and identical composition were singled out as especially beneficial in the field of finance and statistics.

Introduction of official resolutions at the plenary session are made by the joint chairmen, seconder in this case was Mr. Ralph D. Baker, president of the Standard Oil Co. of British Columbia. Exact wording of the resolution adopted was as follows:

"*Be It Resolved* that the Canadian Chamber of Commerce give approval and support to The World Calendar, thus lending its powerful influence to the movement, and giving the Government every reason for pressing to have the reform brought into effect at the earliest possible opportunity in 1956."

Those favorable to the resolution contrasted The World Calendar with "our present makeshift system" and said such things as "This is a much-needed change in an otherwise modern economy." In

support of the new system, the following paragraph was quoted from a report by the International Chamber of Commerce: "The question has been examined from every point of view and the time seems to be ripe for a definite solution. Among those specially concerned, the most important and interested groups are business men and industrialists. Simplification and unification of the calendar are of high advantage to them, and it is their special duty to take the initiative."

A warm interest in The World Calendar Association's proposals was shown by visiting representatives of two out-of-the-country Chambers of Commerce who were present to address the meetings. These representatives were Mr. Andrew E. Hahn of the Association of British Chambers of Commerce (which endorsed The World Calendar several years ago), and Mr. Leonard W. Trester, of the Chamber of Commerce of the United States. Another business man invited to address the plenary session of the convention was Mr. Hugh Crombie, president of the Canadian Manufacturers Association, which has long been an enthusiastic backer of The World Calendar and which, as already noted, restated its support a short time after the Quebec meeting.

The Chamber's action means that 700 Chambers of Commerce and Boards of Trade in every Canadian city and in many of the smaller towns now back The World Calendar as a superior time-measuring mechanism. It also means that in due course the resolution passed at the Quebec meeting will be presented to the Canadian Government as an official expression of the Chamber of Commerce.

It should be noted that delegates to the Quebec meeting appeared well informed on the subject of calendar reform, indicating that they will take further steps to support their organization's action. Canadian members of The World Calendar Association, and members everywhere, may derive encouragement from the Canadian Chamber's move, for they now have valuable allies in their efforts to secure general adoption before the target date, 1 January 1956. They may also count upon the support of many other prominent Canadian organizations which have gone on record in support of The World Calendar. These include the Railway Association of Canada, the Royal Canadian Institute, the Royal Astronomical Society, the Trades and Labour Congress, the Canadian Congress of Labour and the Canadian and Catholic Confederation of Labour. It is expected that the active cooperation of these influential groups will be increasingly felt during the year 1952.

The action of the Canadian Manufacturers Association on 20 November was a reaffirmation of its earlier endorsement. Following this action, Mr. Hugh Crombie, the Association's president, wrote the Right Honorable L. S. St. Laurent, Prime Minister of Canada, as follows: "I beg to advise you that the Executive Council of the Canadian Manufacturers Association at a meeting in Toronto on November 20, 1951, re-affirmed its previous endorsement of the 12-Month Equal Quarter World Calendar, and respectfully requests the Government to endeavor to advance adoption of this new World Calendar by action through the United Nations, subject to the proviso that it should not be brought into effect until a sufficient number of leading countries of the world approve it."

RECORDING THE FLEETING DAYS

By Elisabeth Achelis
President of The World Calendar Association
From The Book of Popular Science, 1951, The Grolier Society, New York City

IF the average man were asked to name the things most essential to him in the daily round of his activities, the chances are that he would not include the calendar among them. Yet in every civilized age, ancient and modern, the calendar has been indispensable. It enabled the men of early times to plan ahead for the sowing, growing and harvesting of crops and for various other activities as well. In our own far more complex civilization, the calendar is even more important. Our complicated industrial structure, with its system of contracts, drafts, checks and promissory notes, is dependent upon it; so is the political structure; so is the intricate tapestry of history; so is the individual citizen in his private life.

The calendar of today is the product of a great many centuries of patient study and of constant trial and error. When man first looked to heavenly bodies for a yardstick for the measurement of time, he observed that the sun seemed to make a constantly repeated journey in the heavens, always returning to the same place after many days. (Actually, of course, it is the earth that makes a yearly revolution around the sun.) He observed, too, that the moon went through a cycle in the course of which it waned until it could no longer be seen and then waxed until it became once more a bright disc.



Old Scandinavian calendars were made of wood.

Most of the earliest calendars were based on moon cycles, which were made to fit as best they could within the larger framework of the sun cycle. The year, in these calendars, generally consisted of twelve moon cycles, or months. Since twelve moon cycles are not quite equal to a solar year, an extra month—called an intercalary or inserted month—was added from time to time. A number of ancient peoples, including the Babylonians,

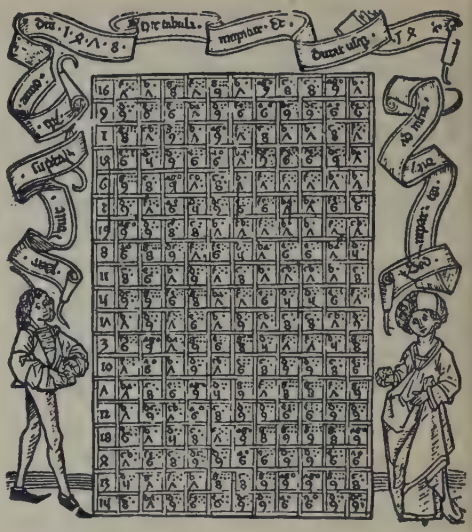
Hebrews, Greeks and Romans, adopted this method of computation.

The Egyptians were the first to base their calendar on the sun cycle and to make the month a purely arbitrary unit, not corresponding to the actual lunar cycle. They worked out a year of 360 days, with 12 months of 30 days each. Since, according to their reckoning, it took 365 days for the sun to complete its journey in the heavens, they added 5 days to the end of the 360-day year. These added days were considered as feast days and the Egyptian priests were entrusted with the task of arranging for them.

The Egyptians observed that the inundation of their land by the Nile River lasted four months, that the planting and cultivating of the crops took up four more months and that it took another four months to complete the harvesting. They remarked, too, that the bright star Sirius began to rise in the sky together with the sun at just about the time that the Nile began to overflow. Therefore the Egyptians divided the year into three seasonal periods of four months each; and they began their calendar with the day on which Sirius began to rise in the east with the sun. (This corresponds to 19 July in our calendar.)

This Egyptian 365-day calendar was adopted in the year 4236 B.C., according to the reckoning of the great American archaeologist James Henry Breasted (1865-1935). According to Breasted, it was the "earliest known and practically convenient calendar of 365 days"; as for the year 4236 B.C., it marked "not only the earliest fixed date in history but also the earliest date in the intellectual history of mankind." This Egyptian calendar was the ancestor of today's Gregorian calendar.

In the course of the centuries that followed, it was discovered that the year really consisted of 365 days and about a quarter of a day. This additional quarter of a day was causing a gradual shift of the seasons as recorded in the calendar.



This medieval calendar enabled readers to calculate the holidays.

It meant that the first month of the Egyptian calendar came to coincide not with the flooding of the Nile but with the harvest period, and, later, with the period of the planting of the crops. In 238 B.C. the pharaoh Ptolemy III, also known to history as Euergetes I, tried to correct this obvious error in calculation by adding another day to the calendar every four years. It was to be a religious holiday and was to be known as the Festival of the Good-Doing Gods. Unfortunately, this edict, which was known as the Decree of Canopus, was not generally adopted. The priests, whose duty it was to adjust the

feast days, were unwilling to accept the extra day since it was not in keeping with the traditions built up under the old arrangement; and the people were just as reluctant to make the change. As a result the Egyptian calendar continued to be defective as a measure of the seasons.

Another seasonal sun calendar that was used in antiquity was that of the Mayas of Mexico. It probably goes back to the year 580 B.C. According to a renowned American archaeologist, Sylvanus Griswold Morley, it was the first seasonal and agricultural calendar in America.

The Mayan calendar was similar in some respects to that of the Egyptians. It consisted of 360 days, with a period of 5 days, necessary to complete the year, added as a short month. As we saw, the Egyptians dedicated the 5 extra days in the year to the gods, but the Mayas considered them as evil days upon which no work could be done, no journey undertaken and no marriage performed. As in Egypt, arrangements for the extra days were left to the priesthood.

The Mayan calendar was arranged differently from that of the Egyptians. The year had 18 months of 20 days. The 20 days within each month were divided into four 5-day series, corresponding to our weeks; each day had its own name. The 20 days of the month began with a cipher; hence the days were numbered from 0 to 19 inclusive, not from 1 to 20 inclusive, as we would count the days in our months.

Dovetailed with the Mayan sun calendar was another imposed by the priests, who used a time system of their own for ceremonial rites and purposes. This was the permutation system, or tzolkin. In this system there were 20 months of 13 days each existing within the framework of the 18-month 20-day year. It was as if we were to have a 260-day year start on 1 January. The 260th day would correspond to 17 September; the first day of the new 260-day year would then correspond to 18 September.

The calendar of the Aztecs was based upon that of the Mayas. The Aztecs realized that a year consisted of 365 days plus a quarter of a day, approximately. Each year they stored away the additional quarter-day for future reference. The slack was finally taken up when a cycle of 52 years had been reached. It is thought that the Aztecs came to realize that an intercalation of 13 days was too long and a 12-day intercalation too short. Hence a 12½-day insertion completed the 52-year cycle. In a period of 104 years (twice 52) 25 such days were added. By this method the Aztecs adjusted their calendar to the seasons.

The Egyptian sun calendar was most carefully guarded by rulers and priests and consequently remained unknown to the outside world for more than thirty centuries. Only during Julius Caesar's stay in Egypt did he learn of this calendar, which was immensely superior to the one used in Rome. The capacious mind of the great Caesar saw the advantages of making a change, and he had the power to do it, even though it required a conquest of apathy and political opposition.

As we have seen, the ancient Romans had a moon calendar; it was complicated and most confusing. There were 12 months; a thirteenth month, called Mercedonius, was occasionally inserted in a haphazard way. The 12 months of the Roman year consisted of 7 months of 29 days each, 4 months of 31 days each and one month, Februarius (February) with

28 days, making a year of 355 days. The names of the 12 months were as follows:

Martius, Month of Mars.
Aprilis, "Opening" month when the earth opens to produce new fruits.
Maius, Month of the great god, (Jupiter).
Junius, Month of the Junii, a Roman *gens* or clan.
Quintilis, Fifth month.
Sextilis, Sixth month.
September, Seventh month.
October, Eighth month.
November, Ninth month.
December, Tenth month.
Januarius, Month of the god Janus.
Februarius, Month of the Februa, purification feast.

In 153 B.C., January was designated as the first month of the year instead of March.

The Romans used a complicated system of reckoning within the month. There were three more or less fixed dates—the calends, the ides and the nones. (Our word "calendar" is derived from calends.) The calends always fell on the 1st of the month. The ides came on the 15th in Martius, Maius, Sextilis and October and on the 13th in other months.. The nones always came on the 8th day before the ides. In designating a particular day of the month, Romans always reckoned backward from the calends, the ides or the nones, as the case might be. Thus the 15th of March would be referred to as the ides of March; the 14th as "the day before the ides of March"; the 13th as "the 3rd day before the ides of March" (more exactly, the 3rd day, counting backward, of the ides period).

The calendar was entrusted to a council of priests—the college of Pontiffs, presided over by a *pontifex maximus*. The pontiffs were not priests in our sense of the word; they were state officials charged with the regulation of certain religious matters. Among their duties was the fixing of dates for ceremonies and feast days. That is why the calendar was under their control; and they flagrantly misused this power for their own selfish purposes.

Their corruption was most apparent in the way in which they inserted the thirteenth month, Mercedonius. Since there were no fixed rules for its intercalation, the pontiffs followed their own interests and those of their friends in the matter. They would sometimes insert Mercedonius in years where it did not belong in order to keep their friends longer in political office. As a result, when Julius Caesar became virtual dictator of Rome, the calendar was in utter confusion.

Caesar was elected *pontifex maximus* in 63 B.C., but it was not until 47 B.C. that he took the first steps to reform the calendar. He called upon a famous Greek astronomer, Sosigenes, to undertake this momentous task. Sosigenes wisely counseled the Roman dictator that it would be futile to try to reconcile the old Roman moon-cycle calendar with the more scientific solar calendar developed by the Egyptians. Following the suggestions of Sosigenes, Caesar adopted the solar year for the Roman calendar; he gave it 365 days, plus a quarter-day of six hours. Quarter-days were withheld from the year until a full day had accumulated; the day was then added to the common year as a leap-year day. This happened every four years.

Further changes had to be made to adjust the short moon year of 355 days to the 365-day sun year. Ten days had to be added to the year, of course; these were distributed among the various months. Seven months now had 31 days each and four months 30 days each. February still had 28 days. It was also alloted the extra day every leap year; but instead of be-

coming the 29th day of February, as in our calendar, it became an additional 24th day. This repetition of the 6th day before the calends of March (1 March) gave rise to the name "bissextile [twice sixth] year" for the leap year.

The year 46 B.C. bridged the old and the new calendar by having 445 days. Contemporary historians ruefully referred to it as the "year of confusion." The following year, 45 B.C., was actually the first one of this reformed calendar. Caesar retained the complicated system of calends, nones and ides within the months; January continued to be the first month of the year. The Roman Senate changed the name of the month Quintilis to Julius (our July) in honor of Caesar. The new calendar was known as the Julian calendar; it was used for many centuries after the fall of the Western Roman Empire.

Caesar was assassinated in 44 B.C. After his death the pontiffs disregarded the leap year provisions that had been established by Caesar. They inserted a leap-year day every three years instead of every four; as a result the calendar again began to be out of step with the seasons. Augustus Caesar, the first Roman emperor, was compelled to correct the error by dropping leap-year days from 8 B.C. to 8 A.D. On 8 A.D. the leap-year series was resumed on a four-year basis.

To honor the Emperor Augustus, the Roman Senate changed the name of the month Sextilis to Augustus (August). This month had formerly had thirty days. The story goes that the Emperor persuaded the Senate to increase the number of days in August by one, so that his month would have as many days as July, named after Caesar. Some scholars hold, however, that Caesar established the length of the months as we know them before Augustus became emperor.

In 321 A.D. the Emperor Constantine issued an edict introducing the seven-day week in the calendar, doing away once and for all with the system of calends, ides and nones. Constantine established Sunday as the first day of the week and set it aside as the Christian day of worship.

There are three theories about the origin of the seven-day week. Some say it is based on the story of creation in the Book of Genesis. The world, according to this account, was created in six days and a seventh day was set aside as a day of rest. Others believe that the number of days in the week was based on the number of the "planets" known at that time—Mars, Mercury, Jupiter, Venus, Saturn, the sun and the moon. (Of course, we know now that the sun is not a planet but a star and that the moon is a satellite of the earth.) Still others believe that the week originated with the phases of the moon, each being of about seven days' duration.

Although the introduction of the week greatly simplified matters, it brought about a serious defect in the calendar. Both the Egyptian and Julian calendars had been stabilized: that is, in them every year had been like every other year. Through Constantine's reform the Julian calendar became a shifting one. Now that there were 52 seven-day weeks, totaling 364 days, there was always one day left over in ordinary years and 2 days in leap years. This meant that in successive years, the Julian calendar began on different days of the week. Suppose that 1 January of a given year fell on a Sunday. The 30th of December would come on a Saturday; the 31st would be Sunday.

The new year would begin on Monday not Sunday, as in the preceding year.

The true length of the solar year is a trifle less than 365 and a quarter days—it is 365.242199 days, or 365 days, 5 hours, 48 minutes and 46 seconds, to be exact. Therefore the Julian calendar was too long by about 11 minutes; after a number of centuries the error in question amounted to several days. Once again the calendar drifted from seasonal moorings.

In the year 1582 another momentous calendar reform took place. Pope Gregory XIII determined to adjust the calendar to the seasons; for this purpose he called upon the services of the mathematician Christopher Clavius and the astronomer-physician Luigi Lilio Ghiraldi, also known by the Latinized version of his name—Aloysius Lilius. They found that the error caused by the excessive length of the Julian calendar now amounted to ten days. To set the year aright, they canceled ten days from the Julian calendar so that 4 October 1582, was followed by 15 October. This was how the month looked on the calendar:

1582			OCTOBER			1582
SUN	MON	TUE	WED	THUR	FRI	SAT
	1	2	3	4	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Naturally this loss of ten days in the month of October created a certain amount of confusion. For example, according to the calendar, little Thingumabob, born on 4 October 1582 was eleven days old on the following day, the 15th! To avoid confusion, dates prior to 15 October 1582 were often given thereafter (and are still often given) as O.S. (old style) or N.S. (new style). In the case of Thingumabob, his date of birth could be given as either 4 October (O.S.) or 14 October (N.S.). If neither O.S. nor N.S. is given after a date, the presumption is that it is N.S.

To avoid further error in the calendar, the leap-year rule was changed. In the case of centurial years (those ending in "00"), only the ones that were divisible by 400 were to be leap years. Thus, of the four centurial years since the establishment of the Gregorian calendar, 1600 was a leap year, while 1700, 1800 and 1900 were not. Non-centurial leap years continued to receive an extra day. The year still began on 1 January. No attempt was made to equalize the length of the months or to stabilize the calendar. This Gregorian calendar is what we use today.

All Roman Catholic countries adopted the Gregorian reform, but other groups in Christendom were slow in accepting it. The English kept on using the Julian calendar for over a century and a half; they did not adopt the Gregorian calendar until 1752. In doing so, they had to cancel eleven days instead of ten, because the year 1700 was a leap year in the Julian calendar, but not in the Gregorian. The eleven days were canceled in September:

1752			SEPTEMBER			1752
SUN	MON	TUE	WED	THUR	FRI	SAT
		1	2	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

France, like the other Catholic countries of Europe, had adopted the Gregorian calendar in 1582. But in the course of the French Revolution, the legislative body known as the National Convention issued a decree (24 November 1793) providing for a new calendar. In this, the year was to consist of 12 months with 30 days each; to complete the full number of days, 5 feast days (in leap years, 6) were

to be added at the end of the year. The new reckoning was to begin with 22 September 1792, when the first decree of the new French Republic had been issued; the date corresponding to 22 September was to be the first day of the year 1. This calendar was abolished, at the command of Napoleon, by a decree of the Senate on 9 September 1805; the Gregorian calendar was re-established on 1 January of the following year.

Japan adopted the Gregorian calendar in 1873, China in 1912, Greece in 1924 and Turkey in 1927. Russia began to use the calendar in 1918, replaced it by a calendar of her own when the Bosheviks took over the country and returned to the Gregorian calendar in 1940.

The Gregorian calendar is not the only one used at the present time. For religious purposes Jews employ the Hebrew calendar, which begins with the year of creation, set at 3,760 years before the beginning of the Christian Era. This calendar is based on the cycles of the moon; there are 12 months, which are alternately 29 and 30 days in length. An extra month of 29 days is intercalated 7 times in every cycle of 19 years; whenever this is done, one of the 29-day months receives an extra day. The year begins in the autumn.

Another important calendar is the Islamic, or Mohammedan, calendar. It also is based on the cycles of the moon; there are 354 days and 12 months, half of which have 29 days and the other half 30. Thirty years form a cycle; 11 times in every cycle an extra day is added at the end of the year. The months and the seasons do not correspond; the first day of the Moslem year falls on different seasons in different years. The Mohammedan calendar begins with the first day of the year of the Hegira—that is, the flight of Mohammed to Medina. This date corresponds to 15 July 622 of the Christian Era.

The Gregorian calendar has served man and served him well for almost four centuries. Yet nations and people have not been satisfied with it; they have tried to bring about reforms that would restore stability to the calendar within the framework of the seasonal year and at the same time rearrange it on a more orderly, scientific and practical basis.

In 1834, Abbé Marco Mastrofini, a Roman Catholic priest, put forward a plan by which every year would be perpetually the same and the lost stability of the calendar would be restored. In his calendar, there were 364 days in the year —a number easily divisible in various ways. The 365th day and the 366th, in leap years, were inserted as extra days within the year. Each year would begin on Sunday, 1 January. The Abbé's idea was so simple and practical that most modern calendar reformers have made it the basis of their own proposals.

Calendar reform lagged until the League of Nations took up the question in 1923. Acting upon a request made by the International Chamber of Commerce, the League turned over the important matter of calendar reform to its Advisory and Technical Committee for Communications and Transit. A preparatory meeting was held at Geneva in June 1931; and in October of that year a full-fledged international Conference on Calendar Reform took place.

More than 500 plans were submitted to the conference. Some of these were based on the decimal system; others, on a 5-day, 6-day or 10-day week. One project intro-

duced 4 long 35-day months and 8 short 28-day months; another, a 364-day year, with occasional "leap weeks" added every 5, 6 or 11 years. Of all the plans submitted to the conference, only 2 received serious consideration. These were the Thirteen-Month Calendar and The World Calendar. Both plans called for intercalated or extra days; both conformed to the seasons.

Each of the 13 months in the Thirteen-Month Calendar has 4 weeks; there are 13 weeks in each quarterly season. That makes a total of 364 days. To bring the total up to 365, a "year day" is added, corresponding to 29 December. The names of the 12 months of the Gregorian calendar are kept; the thirteenth month, set between June and July, is called Sol.

This calendar met with serious objections. Americans were unwilling to accept a calendar in which their Independence Day would come, not on the traditional date of 4 July but on 17 Sol. Businessmen complained that it would complicate matters for them; that, for example, they would have to issue statements to all their customers thirteen times a year instead of twelve times. As a result the Thirteen-Month Calendar is now no longer seriously considered.

On the other hand, The World Calendar, based on the easily divisible number twelve, has grown steadily in popular favor. In this calendar each equal quarter year of 91 days or 13 weeks or 3 months corresponds to a seasonal period. The three months within each quarter-year have respectively 31, 30 and 30 days; every month has 26 weekdays plus Sundays. Every year in this calendar is like every other year; the first of every year, for example, falls on a Sunday; Christmas, 25 December, falls always on a Monday.

Since each quarter-year consists of 91 days, the total number of days in all four quarter-years is 364. To provide the necessary 365th day, another day—known as Worldsday—has been inserted. It is placed after 30 December and before 1 January; it belongs to the months of December. Worldsday is a world holiday.

The 366th day in leap years is inserted between 30 June and 1 July; it is called Leapyear Day and is also considered as a world holiday. Worldsday and Leapyear Day are dated respectively W December or 31 December and W June or 31 June; the letter "W" is preferred. These two stabilizing days keep the calendar on an even keel with the seasons. The Gregorian four-hundred centurial leap-year rule is retained. In fact, The World Calendar differs but little from the Gregorian calendar; the two are identical for the period between 1 September and 28 February, bearing in mind, of course, that Worldsday, W December, is equivalent to 31 December.

In 1937, when the League of Nations asked the different member and non-member nations to give their opinion of The World Calendar, 14 nations approved it, 6 rejected it, 8 abstained from replying, 10 said that they were not prepared to reply and 7 believed that the time was premature for a new calendar. The result was considered unsatisfactory; besides the League felt that so momentous a step as the introduction of a world calendar should not be taken with political conditions as unsettled as they were throughout the world. Therefore, the new calendar was set aside. It has been revived in the United Nations and has already won a great deal of support in that body.

EXCERPTS AND REVIEWS

Why Wait Longer?

By CHARLES V. MATHIS
(In Wildwood, N. J., Leader)

IN an age and a country boasting of our high efficiency and elimination of waste, calendar confusion which could be easily straightened out seems the height of business absurdity. The world will collect dividends far into the future when calendar reform is enacted.

Most of my readers are interested in the resort and tourist business. Calendar reform means much to them.

During our year there are eleven major holidays of a general nature, plus additional religious and traditional dates which vitally affect resort and hotel business. Perhaps most notable are Memorial Day and Labor Day. Our summer business usually terminates on Labor Day, which is always the first Monday in September, but varies in date from the 1st to the 7th. When the holiday falls on the former date, our business men lose an entire week's business.

Look at Memorial Day. If it comes on a week-end, we cater to large crowds. In 1950, it came on Tuesday, and a hotel which would have expected 400 people for a week-end holiday, had only 100 guests.

The out-moded calendar is an expensive luxury. It's dollars out of our pockets——and lots of them—every added day we cling to it.

Time and Change

(In The New York Times)

OUR world lives and moves by the Gregorian calendar. Some older calendars continue to fix the days for religious observances, but all nations, including the Soviet Union and its satellites, have recognized the tremendous advantages to be gained by agreeing on one set of purely arbitrary divisions of time.

"These divisions of time are purely arbitrary," Nanki-Poo once explained. "Who says 24 hours make a day?"

"There's a popular impression to that effect," said Pitti-Sing.

"Then we'll efface it," Nanki-Poo boldly asserted. "We'll call each second a minute, each minute an hour, each hour a day, and each day a year."

By this simple revision of the time scale, Nanki-Poo, who was to be beheaded within a month, was able to look forward to 30 years of married happiness in a delightful Gilbertian world.

There is still a popular impression that 365 days make a year. No one has come forward with any useful suggestion on how to turn time backward in its flight.

But who says 365 days make a year? Not the astronomers or mathematicians who have taken the greatest pains to get this matter just right. Even so the calculations do not quite agree. The so-called Sidereal Year, reckoning the time of the earth's revolution by a fixed star, works out at 365 days 6 hours 9 minutes 9.6 seconds. The so-called Tropical Year, based on the interval between one vernal equinox and the following one, works out at 365 days 5 hours 48 minutes 46 seconds. And these periods are reckoned in a purely arbitrary measure called mean solar time. Then the earth is divided into arbitrary time zones, in each of which all the clocks must agree. So when the crowds gather and greet the new year they are conforming to a convention—one of the most useful conventions the world has ever agreed to as a way out of confusion and uncertainty.

But who says the new year begins on

1 January and not any one of the other 364 days of the year? That is another arbitrary convention arrived at only after thousands of years had been reckoned by civilized peoples in other ways. To primitive men the spring equinox seemed the right time to begin the year, for that was when they resumed their simple tasks after a winter of enforced idleness. The ancient Egyptians chose the autumnal equinox, for that was the time of the Nile floods, upon which their very lives depended. The Greeks at first used the winter solstice, but in 432 B. C., in the midst of the Peloponnesian War, they switched to the summer solstice. The old Romans began their year at the winter solstice, but the idea that the year should begin with the spring lingered in the mind of Ovid, a poet of the Augustan Age.

If any one man can be said to have fixed the date for our New Year it is Julius Caesar. The Julian calendar started off the year now reckoned as 45 B. C. on 1 January. New Year's was a Roman holiday, with sacrifices to Janus, feasting and gifts to the magistrates who took office on that day. But medieval Europe returned to the older calendar and kept 25 March as New Year's for centuries. Not until 1582 did the enlightened men of the Renaissance reform the calendar for Pope Gregory XIII and fix the years and the months in their present order.

New Times, New Methods

By Henry Nicholas

(In Central Press Feature Service)

EVERY time we look at a calendar we are reminded of the inability, so far, of the world to agree upon the number of days in a month, or the length of an hour, a day, or a year. Man has been continuously changing his way of measuring time since the dawn of recorded history.

Had it not been for the Korean war, the United Nations would have recommended the adoption of The World Calendar as of 31 December, 1950.

Seventeen nations, including those as far apart in their political views as Afghanistan, Norway, China, Uruguay and Turkey, had given formal approval.

The United Nations was waiting for the formal approval of one of the major nations before recommending the adoption of The World Calendar. The United States had accepted the invitation, and a measure which was being considered by the Senate would have given United States approval.

The changeover could readily have been made in 1950, when the Gregorian calendar (now in use) coincided with the proposed new calendar. A similar favorable opportunity will not recur until 1956.

For more than a century scholars, business men and statesmen have urged the adoption of a new time system in which the quarters and months of the year are stabilized and the days of the week and dates of the month always agree.

Here's Hoping

Washington Times-Herald

OUR present calendar offers us nothing but change and confusion. Dates keep roving about the place with reckless abandon, so that if you were born on, say a Tuesday, you find yourself celebrating the occasion on a Thursday one year, a Sunday another year, and so on.

Speaking of confusion, do you know the actual weekday on which you were born?

One major reason for the flaws in our present calendar can be found in its great age. Actually, we are still using the basic calendar devised at the command of one Julius Caesar, dead now these past 2,000 years by any calendar.

The Julian calendar was improved by Pope Gregory XIII's mathematicians in 1582 and an excellent job in its day, too, but now it's as out of date as the toga.

The World Calendar is a scientific, systematic improvement on these past efforts. With its unchanging regularity, it will be a far-reaching boon to businessmen, banks, taxpayers, insurance companies, railroads. Here's hoping Congress will act, and soon.

CURRENT PRESS COMMENT

Vexatious Conflicts

The New York Times

OFFICIAL adoption of the Hebrew calendar by the new state of Israel surprised no one. To all in international trade and diplomacy, however, it points up an old problem. The many year-and-era reckoning systems in use today all over the world are confusing, just as scores of languages and dialects are confusing.

So vexatious is the calendar problem internationally that the search for a system readily translatable into all others has gone on for at least a century. The United Nations is now aggressively carrying on the quest for simplification.

Like China's old calendar, the Hebrew system follows the ancient Babylonian pattern. It gives heed to the moon-month of 29½ days and a year of 12 moon-months or 354 days. It then inserts an extra month every few years to balance lunar and solar years. This requires seven extra months in the course of a cycle of 19 years. The Ethiopians, using a similar plan, throw in an annual thirteenth month of five or six days, for which nobody gets paid and no one pays rent.

Every Year the Same

Tyler (Tex.) Temple Beth El Bulletin

AS we change our calendars for the new year and set them up on desks and walls, we might well be reminded that we have missed a chance to avoid this yearly business. Calendars for the year 1950 would have served as perpetual calendars if the plans and purposes of The World Calendar Association, with its 37 international affiliates, had been carried out. Now the world must wait until 1956 for the United Nations to adopt calendar reform.

Some of us may be glad to throw away the soiled old calendars and replace them year after year with the new gawdy or neat ones that come to us from persistent advertisers. But many of us, for practical reasons, would be better pleased to have such change altogether unnecessary. If every year should be the same, one well-made wall or desk calendar would do always and require less frequent reference. For 116 years, this desirable innovation has been deferred.

Because the extra days of The World Calendar, one every year and another every four years, disturb the regularity of the Sabbath, Jews have opposed the change. Should we?

Worthy Objective

Halifax (N. S.) Chronicle-Herald

FOR persistent devotion to an ideal, in the face of considerable difficulties, it would be hard to beat the earnest reformers of the calendar. Although 116 years have passed since their efforts began, they continue to strive mightily for their worthy objective.

The most favored scheme is one in which the 12 months are re-arranged slightly into a perpetual calendar of equal quarters. Through the years, the advocates of this calendar have won approval from an impressive list of governments and organizations. But the year 1949 brought a disappointment because of a postponement by the United Nations. Thus the remarkable and highly significant year of 1950, marking the mid-century, was allowed to pass without recording definite action toward a new calendar.

FROM THE MAIL BAG

There can be no two opinions about the necessity for The World Calendar. Thinking individuals in India are interested because of the widely variant systems used here.—C. Mahadevan, Prof. of Geology, Andra University, Waltair, India.

These very sensible and attractive proposals should receive international approval in the near future.—Dr. C. M. Focken, Museum Director, Victoria, N. Z.

In the name of the Society of the Friends of the United Nations, I salute this plan which has our full backing.—Heinz Gremmler, Secretary-General, Berlin, Germany.

The World Calendar appears the most feasible practical reform. I should like to persuade the Business Men of Southend-on-Sea to form a Standing Committee to advocate it publicly in England.—Rev. W. Stanhope-Lovell, Westcliff-on-Sea, Essex, England.

It is merely a sort of reflex resistance that delays this achievement for order, balance, stability and harmony.—Mahmoud Abdulal, Beni-Suef, Egypt.

Excellence of The World Calendar insures that the campaign which is being so favorably received will finally bring complete success.—Raul Colombo Berra, Rosario, Argentina.

There is steadily increasing interest here in the subject of calendar reform. Our people have great sympathy with its basic objectives. — R. Sundram, Karaikudi, S. India.

As a scholar ignorant of the particular problems involved in the work of The World Calendar Association, but gifted (it is hoped) with a certain modicum of common sense and possessing a very sincere desire to see solid progress in at least one department of life in this disintegrating world of ours, I desire to place on record my enthusiastic support of your scheme and to wish success to it and to you.—Sir Alan Gardiner, F.B.A., Hon. Fellow of Queen's College, Oxford, Egyptologist and Writer on the Theory of Language, Oxford, England.

Professor Vladimir Prochayka, Chairman of the Foreign Affairs Committee of the Czechoslovak National Assembly, is very interested in The World Calendar proposal, and adds that in his country it is conceded that a revised calendar would be beneficial to the development of the national economy. —John A. F. Ennals, Secretary-General, World Federation of United Nations Associations, Geneva, Switzerland.

The more I look into this matter of The World Calendar, the more impressed I am. It has so much merit that every effort should be made to persuade people. I shall be particularly interested in promoting the idea among agricultural groups. — J. H. Frandsen, Dean, Department of Dairy Industry, University of Massachusetts, Amherst, Mass.

Your *Journal of Calendar Reform* is an interesting publication, truly indicative of a powerful and sincere promotional campaign. The activity for calendar reform in other nations is particularly impressive to the editors of two international publications with a readership of 35,000 business men in more than 100 countries.—Lloyd S. Koppel, Editor, *America Commercial*, Philadelphia.

Adoption of The World Calendar will be important to all members of the Greek Orthodox Church, because it will clear an ancient misunderstanding that is still prevalent. It will simplify, educate and promote peace and unity in a great segment of Religion.—Rev. Stephen Daglis, Newport, R. I.

Any educator can see that The World Calendar would be a great help in preparing school schedules and programming activities.—Earl Schroer, High School Principal, Omaha, Neb.

RECENT CALENDAR RESEARCH

Approval from Holland

By W. B. Rombouts
(In Signall, Hoorn, Netherlands)

EVERY home has a calendar, and most people also find it necessary to carry one in their pockets. Consulting of a calendar is necessary every time we make an appointment or try to remind ourselves of a birthday, a holiday or any other future event. This is mostly because we can't tell, without a calendar, whether a coming date is going to occur on Saturday, Sunday or some other inconvenient weekday.

It would be nice, of course, if we could know these things without all the bother of consulting the printed page. It would be nice if the annual calendar were invariable, with every year the same. So that we could say, without thinking, that 1 January is, of course, a Sunday, and 1 May, of course, a Wednesday, and 20 November, a Monday.

That is one of the incalculable benefits which will come to us with the adoption of calendar reform, according to the plan known as The World Calendar.

Mid-Week Holidays

By Elisabeth Achelis
(In New York Times, 15 July 1951)

THIS summer we experienced two mid-week holidays with confusing results. Memorial Day and Independence Day both came on Wednesday. Sandwiched between weekdays, they brought a minimum of satisfaction and a maximum of inconvenience.

Split weeks are expensive. Business economists estimate a 1.5 per cent loss yearly, due to starts and stops in the even flow of production and distribution. No wonder there is agitation to place holidays on Mondays, and on their fixed dates, which can be easily accomplished through calendar reform. The underlying trouble is primarily a matter of the irregularities of our calendar. This emphasizes the importance of calendar reform, which the United Nations is seriously considering.

Defects in the calendar are historical. They are survivals from ancient compromises and superstitions. The calendar is 2,000 years old and is practically the same as it was when Julius Caesar installed it, except for slight modifications by Pope Gregory XIII.

The World Calendar, the proposed improved system approved by seventeen governments, is a simple and easy formula whereby the defects of the present calendar are remedied without upheaval or inconvenience. Full details of the plan are available in every public library, in standard encyclopedias or in *The World Almanac*, or will be supplied on request by the information section of the U. N.

It is increasingly urgent for American citizens to write their Government, as is their constitutional right, expressing their opinion on this matter. In Washington the State Department has just completed a study of the question, but has ruled that it cannot take further action without a Congressional mandate. Obviously, action in the U. N. will be strengthened when the American delegation takes a more positive position.

Campaigner for Improvement

By William E. Oriol
(In Bergen, N. J., Evening Record)

WHENEVER he looks at a calendar hanging on the wall or staring at him from his desk, Joseph M. Naab of Ridge-

wood has a simple, automatic reaction. He thinks it's a mess.

Because he feels this way, he has embarked upon a crusade which has stirred comment all the way from Philadelphia to Los Angeles. He has written letters, articles and speeches intended to help achieve the goal of a new calendar for the whole world by 1956.

Naab recently asserted, in a magazine article, that the annual savings brought about by calendar reform would be sufficient to pay the interest on the national debt. This statement attracted the attention of financial columnists across the nation, who roundly agreed with him about the need for an improved calendar but questioned his figures as to the enormous savings which would result. Answering their queries, he showed that stabilized holidays alone would remedy a loss of 1.5 per cent in national productivity, and that this sum—aside from other economies—was approximately the equivalent of interest on the national debt, or five billion dollars a year.

To help put across the new calendar, Naab is not only writing for publication; he is personally corresponding with business organizations and industrial groups. He regards his home locality as a ripe field for this campaign.

A man who has worked with digits all his life, Naab has been for many years vice-president and treasurer of the important Leslie Company of Lyndhurst, manufacturers of railroad equipment.

Until his goal is achieved, he will keep on writing and spreading the word to relegate the present calendar to the graveyard of other outmoded social usages, along with horse cars, high button shoes and last year's jet plane record.

Important to Business

By Les Rimes

(In Western Business and Industry, Vancouver, B. C.)

So you're planning to start a vacation the second Sunday in October? What date is that? If you haven't a calendar handy, chances are you don't know. Most of us haven't yet figured out the date of Easter, let alone a date in October.

That is just one reason why proponents of calendar reform tell us that our present calendar needs an overhaul.

You say you are doing a $6,000 business each month. Are you talking about February, with only 28 days, or March with 31? And if you are talking about March, do you mean March with five Sundays in it, or March with only four? It does make a difference in your earnings.

A year, as you know, contains 52 weeks. But some years with 52 weeks contain 53 Sundays.

If you're talking in broad terms like "semi-annual," are you forgetting that the last half of the year contains three more days than the first half? Which means they are not halves at all.

Most people realize that the present Gregorian calendar has neither rhyme nor reason and is as inadequate as it is antiquated. Revision would simplify statistical records, bookkeeping and quarterly summaries.

In the new conditions of modern times the unequal months and other inconsistencies are obviously a constant source of considerable inconvenience and difficulty in all fields of human endeavor.

Calendar reform affects every man, woman and child in the civilized world. But it will be business and professional men who will be affected most by any change. The interest, whether pro or con, must stem from business men.

The question of reform is an international one. All countries in the trading world must unite in the change. But someone, somewhere, must take the initiative. Canada has been a major advocate of revision, just as Canada led in championing the time-zone system which gave us our Standard Time throughout the world.

With Canada now taking an increasingly important part in international commerce and world affairs, it behooves us to give calendar reform plenty of study so that we as individuals may voice strong opinions in world conferences.

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EDITORIAL PARAGRAPHS

Some people think calendar reform disturbs the continuity of the seven-day week. Most of us, good Christians included, are already violating the Bible by working a five-day week. The commandment is clear: "Six days shalt thou labor." Perhaps the same people who oppose calendar reform on the basis of this very same Bible quotation will now want to campaign for a six-day work-week.—*Wilkes-Barre Record.*

We have become so used to our calendar that we are almost surprised when someone goes to the length of pointing out that it is ridiculous, inconvenient and a nuisance. The advantages of the new World Calendar are plain enough. Uniformity would obviously simplify every sort of timetable.—*Rotary Service, London, England.*

Reform of the calendar has made steady progress in recent years. In several countries there have been government officials, influential individuals and important organizations that have insistently protested against further delays in this important matter. Most recent news is that organized labor in Canada has requested their government to hasten the adoption of The World Calendar. This follows the action in France of our standardization commission (AFNOR), which has held several meetings on the subject.—*La Vie, Toulouse, France.*

Representations respecting the adoption of The World Calendar have recently been made to the Canadian Government by groups which together represent more than 83.5 per cent of the country's organized labor.—*Labour Gazette, Ottawa.*

If you want The World Calendar, isn't it worth while to write your Secretary of State in Washington and ask him to support it in the UN? As it was, Senator Austin, representing the United States at the UN, voted against having the question considered there. Why? Because not enough of us told him through the State Department that we wanted the question considered.—*Devil's Lake (N.D.) World.*

More than ever, the desirability of revising and improving our present calendar is on the order of the day, both in France and internationally.—*Republicain du Sud-Ouest, Bayonne, France.*

Ever hear of The World Calendar? It's a calendar that would unscramble all confusion. It's a good plan that ought to be pushed.—*Indianapolis Times.*

Here's a problem that will have to be met some day. The present calendar is inefficient and clumsy. Calendars have been revised before and can be revised again.—*Oklahoma City Oklahoman.*

Our present system of time keeping is nothing less than chaotic.—*Philadelphia Bulletin.*

Midweek holidays this year have indicated the importance which should be attached to immediate steps for calendar revision. The Fourth-of-July holiday on Wednesday was disrupting to business and gave employees only a slight respite from their duties. It's unfortunate that more interest has not been exhibited by American citizens and by business men in the advantages of the proposed World Calendar.—*Greensburg (Ind.) News.*

Considerable progress has been made in obtaining additional support for the new World Calendar, stabilized and perpetual.—*Buffalo (N.Y.) Courier-Express.*

It is refreshing to note in these days of tensions and counter-tensions that an international group is plodding along with the goal of improving the calendar. The present calendar is bumpy. As a cure for many ills, this old world needs a good, solid, smooth calendar.—*Springfield (Mo.) News and Leader.*

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



After reading please pass on to others.

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APR 2 1952

SCIENCE & INDUSTRY

Journal of CALENDAR REFORM

TIME FOR ACTION

March 1952

THE WORLD CALENDAR

1ST QUARTER

JANUARY						
S	M	T	W	T	F	S
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2ND QUARTER

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W

3RD QUARTER

JULY						
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4TH QUARTER

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W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days, 13 weeks or 3 months; the four quarters are identical in form.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.



ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXII FIRST QUARTER 1952 No. 1

RIGHT timing is vital. Upon it depends the acceptance of a new idea, the achievement of a cause, the advancement of world progress. The World Calendar is at the point of its right timing. Favorable international action this year would lead to adoption in 1956—when once again (in cycles of five, six or eleven years) both the Gregorian and World Calendars meet on Sunday, the first of January. To be ready for so significant a change, preparation is important.

Revision of the calendar is a world project that requires world action. Thus it belongs in an international organization for international acceptance.

Fortunately for the world, such an international body exists and is currently functioning—the United Nations. Among its activities is included calendar reform. In 1947 its Economic and Social Council (ECOSOC) took up the matter but later laid it temporarily aside owing to the pressure of emergency measures. Two years later the subject was on the provisional agenda of the General Assembly, but again it was postponed because of an overcrowded program. In both instances, regrettably, no affirmative stand was taken, and the significant closing of the half-century year was allowed to pass without positive action.

Happily for posterity, the United Nations again this year has a propitious opportunity to deal with The World Calendar. First in the ECOSOC meeting in the spring, and later in the fall when the General Assembly can give its endorsement. Ratification by individual nations would then follow.

What are the reasons why action on a revised calendar is so important for world approval? There are three. The first has already been mentioned—the timing is right. This year is the preparatory year for obtaining approval in the United Nations, so that its action can be ratified by governments to prepare for the change in 1956.

The second reason is the great saving which The World Calendar will

bring to the world at a time when economic pressures are heavy. Adoption of an improved calendar will conserve valuable time, money, effort and material, needlessly and often unconsciously wasted. Thus every delay and inaction will continue to *rob* nations and peoples of valuable time and capital because of the inefficiencies of the present method. The new calendar is an outstanding system for greater economy and conservation, and can be introduced with relatively small cost compared to the many benefits to be gained.

The third reason is the unifying and uniting influence of this universal calendar. Peoples from all parts of the world will not only be joined in the common everyday use of the new system, but they will also unite in the annual observance of the Worldsday that closes every year, serving as a focus and inspiration toward more harmonious relationship. The revised calendar will be an outstanding instrument toward cooperation, brotherhood and peace.

One of the main purposes of ECOSOC, we are told, is to bring to the world a better life, founded on justice, freedom and plenty. The principles of The World Calendar are in accord with this approach and will contribute to these ideals.

NEWS BULLETINS

BRUSSELS.—Belgium may be expected to support The World Calendar in any international discussion of the subject. It is known that a thorough review of calendar revision was made by the government three or four years ago, and the policy then outlined (and now in force) was entirely favorable to international adoption of the 12-month equal-quarter plan. This position was supported not only by the Foreign Office but also by other departments, which emphasized the sound economic aspects of the reform. No opposition was indicated by any of the authorities consulted, the only question raised being that of timing any action so that world-wide approval would not be impeded.

LONDON.—The year 1952 marks the 200th anniversary of the calendar as it is known and used in English-speaking countries. It was in 1752 that Great Britain finally decided to get in step with nearly everyone else by adopting the Gregorian system. Special note of the bi-centenary is being taken by calendar printers in England, Canada, Australia, South Africa and the United States. Behind the calendar of today lie centuries of research, confusion, adventure and romance, all occasioned by man's ceaseless efforts to nail down time to an accurate schedule of measurement.

TOKYO.—Activities of the Calendar Association of Japan during the year 1952 will include the publication of three monographs: Main Purposes of The World Calendar, by Dr. C. Noda; Calendar Reform as Applied to Japan, by Dr. J. Ueta, and Fixation of National Foundation Day, by Prof. S. Imoto. These will be published in editions of about 3,000 copies each and distributed to influential people in various interested groups, as well as to libraries and the press. Important support for The World Calendar is evident among the United Nations Associations in leading Japanese cities.

Journal of

CALENDAR REFORM

MARCH 1952

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NEWS BULLETINS

PARIS.—France is sending its leading advocate of calendar reform to the United States in June, to preside over the meetings at Columbia University of the ISO (International Standardization Organization). He is M. Albert Caquot, a member of the Institute of France and an engineer who is famous in Europe for his invention of the Caquot Sausage, an oblong observation balloon which baffled the German air force in World War I. . . . M. Caquot is president of ISO, with headquarters in Geneva. For 25 years he has been interested in standardization and was one of the organizers of AFNOR (Association Française de Normalisation), which is currently promoting calendar reform through a special committee representing all branches of French government, industry, labor and learning. M. Caquot is president of this committee, whose aims he has outlined as follows: "We shall confine our recommendations to minimum changes in the calendar—the simplest possible revisions as embodied in The World Calendar. If we ask for more, we will get tangled up in questions which are not of the highest importance. I hope we can go to our government and other governments with a unanimous request for this simple re-arrangement, a reform which brings great advantages and no serious transition difficulties." A summary of the preliminary report of his committee was published in the September 1951 issue of the *Journal of Calendar Reform.*

CALCUTTA.—Scientists of India have issued a 30-page monograph by the distinguished Professor M. N. Saha of the Institute of Nuclear Physics, appealing for support of The World Calendar and for a preliminary adoption of a "National Calendar" in India, along with the establishment of a National Observatory with a competent staff of astronomers to publish annually an Indian Ephemeris and a Nautical and Air Almanac. . . . The monograph deals in detail with the current calendar confusion in India, and sums up the international picture in these words: "The Gregorian calendar which is now used over the whole civilized world for civil purposes is an extremely inconvenient and unscientific system of time reckoning. It should be given up in favor of The World Calendar." Copies of the monograph may be obtained on request from the Indian Science News Association, 92 Upper Circular Road, Calcutta.

NEW YORK.—As in previous years, The World Calendar Association is distributing a 1952 "Calendar Contrast Card" which shows the current Gregorian calendar for 1952 opposite the ideal perpetual World Calendar. The cards are 2½ by 3½ inches in size, fitting easily in wallet or purse. On the back cover is a brief explanatory text. Copies in reasonable quantities are free on request.

Farmers Have Plenty of TIME



By Eva Beard

As I write, Spring is on the way outside my window. And those marvelous calendar keepers, the migrating wild birds, are returning—singly, in pairs, in flocks. They bring a welcome message—that we who live on the land, and farmers above all, may begin once more to build anew our infinitely complex relationship with earth, sun, the wheeling planets, the moon and stars.

That relationship changes constantly. Agriculture is not merely "affected by science," as the schoolbooks say: it is itself a science, and the farmer a scientist.

In our ordinary daily life, we use many calendars. Not just the printed tabulation on the wall, but also some of nature's more subtle methods of marking out the significant periods of time's passage. We pride ourselves on being calendar experts—and those who have new proposals for revising the measuring of time would do well to get the benefit of our experience and knowledge.

My neighbor's geese provide me with one of my favorite methods of time reckoning. All through the winter she has been feeding them well (as did the good wives of medieval Europe), and like those





women of old times she went out on February Second to look for the first egg on Candlemas Day—the cosmic egg, symbolizing the sun and rebirth, new life. It had been a cold winter, as she expected from the day in late November when she found that the breastbone of the Thanksgiving goose was thick, the bones red, the feathers heavy with a generous tuft of down at the base. Folklore though I know all this to be, I am prone to believe. In August, moreover, I had received first warning when V's of Canada geese flew overhead, going South earlier than usual.

But they told me later that Spring would be early, too, for they returned before their regular time, flying high. I repeated to myself the old saying that "The goose hangs (honks) high"—in the upper strata of the atmosphere. I knew then that the weather for the next few days would be clear. Bad weather comes to us from the higher strata, and geese flying high would be the first to feel it and come down lower. Cleverest of all domestic fowl, the goose has a gift of wisdom that has been held in high esteem in all countries since ancient times.

The American farmer is descended in the longest of all human lines from those earliest calendar makers, the first agriculturists of a prehistoric era. Like them, he does not take kindly to undue interference with the ancient and accepted methods of time reckoning. Time is something he understands better than other men. He knows by a subconscious process that it is a strange and powerful essence of his being—a word which he often oddly uses to mean a slowing down, a pause (when time of its very nature can neither slow nor pause).

He has never quite accepted "daylight saving." He prefers to run his affairs on God's Time, as he calls it. This innovation called "daylight saving" is to him a device for the benefit of city folk; it saves him no daylight.

When the pioneer American farmer left the eastern settlements and single-handed carved for himself a clearing out of the gloom of endless forests, he took Time with him. Time was sunrise and moonrise, the Great Bear and the Little, Orion —the hunter of the heavens, with the Dog Star, bright Sirius, at heel. Sirius was a favorite with him, as it had been with his remote ancestors in Egypt, when its first rising came with the flood waters of the Nile and its movements helped to shape the form of our present calendar, more than forty centuries before Christ.

The pioneer farmer carried his almanac with him. He planned to buy a new edition every year on his first visit to a settlement, but that visit might be delayed by months or even years. Meanwhile, like his forefathers, he used his heavenly time-



pieces as best he could; but he added to them certain earthly methods of measurement and reckoning — the black bear emerging from his den as winter waned; catkins lengthening on hazel, willow and alder; elm and red maple flower buds softly coloring the treetops.

When his farming had advanced as far as livestock, he knew to a day—the 280th —the time when his cow would drop her calf. His ewe would give him a lamb on the 150th day, his sow a litter of pigs on the 120th. The moon calendar of his Indian neighbors, friend or foe, became his. His trusty almanac, of course, still made obeisance to the moon goddess, and in addition it provided him—in a day when there were no farm journals—with such simple agricultural science as the times afforded.

Winter was a period of waiting. Even after the Long Night Moon of the Iroquois had passed, the cold lingered. Our pioneer kept his eye on the nearest woodchuck hole, trusting he was right about the day of the month, February 2d. If on that day the chuck saw his shadow, he went back into his den for another six weeks of winter. Today the scientists at the Weather Bureau skeptically discount the woodchuck's annual prophecy, and explain that the legend was imported from across the sea—that he has been substituting in folklore for his cousin, the European groundhog of a somewhat milder clime. Yet, in his quiet scissor-toothed way, our native rodent was merely taking note of a solar holiday—the day when the sun charts its course toward spring and summer.

February 2d is the Candlemas Day of the early Christian Church, celebrating the Purification of the Virgin and the Presentation of Christ at the Temple. It stems from earlier Roman purification rites, when women carried candles for the worship of Venus, goddess of beauty and growth in nature. In her oldest Latin form, before she became identified with the Greek Aphrodite, Venus was the protectress of skilled cultivation. On February 2d she first rises with the dawn—Star of the Morning.

In Quarryville, Pennsylvania, on Candlemas, 65 members of the 50-year-old Slumbering Lodge celebrate their annual rites, which have an origin in immemorial antiquity. Wearing ancient top hats or sombreros and carrying shepherds' crooks or fish poles with white flags attached for signalling, they keep watch over woodchuck holes and report their findings at the later festivities in which the whole town joins.

The modern farmer is still closely akin to his pioneer ancestor. He runs his farm not by one but by a dozen calendars. In his orchard, for example, he must follow

the calendar of bloom, for he must know what pollen will be ready to cross-fertilize each variety. Later on he must know the calendar of harvest, that he may plan ahead for picking and marketing and storage. All the time he must watch the calendar of the insect pests from far and near—how many broods a year and when; and ever more attentively and intricately, the calendar of sprays and dusts which mean fair fruit for the market.

To each crop—vegetables and small grains and forage grasses—there is its special calendar. If a part of a farmer's acreage is in forest, he has still another calendar to add to his long array—the great growth calendar of the trees, a marvelous system of annual measurements which is only slowly and lately becoming part of his background thought.

Equating all these calendars with our present Gregorian system gives the farmer more trouble than he perhaps realizes. However, he becomes acutely conscious of the eccentricities of today's standard calendar when he makes his increasingly complex adjustments to the world of business—that other world through which his products reach the consumer. He notes that a large proportion of the huge quantity of business advice which is his for the asking is based on yearly averages.

If he buys a new farm, for instance, government soil surveys can tell him average yields of farm crops for each type of soil in his acreage. Presently he is charting his own five-year plan, and it is then that he really finds out what the Gregorian calendar means to him in irritation, in time wasted, mistakes in reckoning.

That he is an efficient farmer does not necessarily make him a good or a willing mathematician. Anything that simplifies his "desk work" is money in his pocket. A permanent calendar with even quarters and days of the month, comparable from year to year, would undoubtedly lessen his troubles. Practically the only reasonable aid to his "figuring" is our decimal system of coinage; our cumbersome way with weights and measures has always been a protracted nuisance.

So simple and unspectacular a revision as the proposed World Calendar, and one so little disturbing to existing habits, seems likely to get definite support in the farm world. Once it is understood as a practical possibility, it will be approved with relief and applause. The farmer sees no merit in a movable Easter, nor in mid-week holidays.

In the rural districts, children more and more attend large centralized schools. The farmer joins the Parent Teacher Association, becomes a school trustee, and is vastly more conscious of school problems of administration, such as scheduling of classes and vacations, than he was when his youngsters went to the Little Red School House. Everything is "large scale" these days, including his school tax. If he must pay high for the education of his children he wants to get his money's worth. Once let him realize the time wasted by the staff in dealing with an outmoded irregular calendar, he will want it changed overnight.

His moon calendar, that most ancient of farmer's guides, will still be his. Foolhardy indeed would be the publisher of an almanac who left out the moon, the planets, the weather prophecies. Today's almanac publisher, carrying water easily on both shoulders, prints the latest science side by side with ancient folklore. These can continue to live comfortably together.

NEW YEAR'S OUTSTANDING BROADCAST

By Clifford Troke
Science Editor, British Broadcasting Corporation

As part of the B.B.C.'s impressive schedule of New Year's programs and reviews, the Science Department of the broadcasting service gave a part of its General News time on 4 January to this discussion of calendar history and The World Calendar. This was one of Mr. Troke's last appearances on radio—a few days later he was taken seriously ill, and died on 27 January. In the presentation of the subject over the air, he was assisted by Harold Watkins, who is already known to readers of the Journal through an article which he contributed to the December 1951 issue.

MASTERY of time measurement is a problem as old as civilization. It includes both the clock and the calendar. The clock measures our hours, minutes and seconds; the calendar counts off our days, weeks, months and years. Both clock and calendar are based, you might say, on the same master pattern. The hands of the clock, as they move around the dial, reproduce, in fact, the path of the earth around the sun—that vaster clockwork on which the calendar is founded.

Yet though clock and calendar have developed together, as powerful formative factors in the civilizations which have produced them, one is highly rational, accurate and satisfactory, the other is not. For while the intricacies of the clock have no purpose other than the equal division of time, all manner of irrelevant factors have invaded the calendar. And although our present calendar is in essence a magnificent achievement of the human mind, it is in practice a sad chaos —so much so that there exists a vigorous movement aiming at its revision.



Clifford Troke

Time is a flow, differing from all other flows in this, that everything flows with it. Since time moves continually, all the devices which measure it involve motion. What we do is to take a certain regular motion, a movement as regular as possible, and keep it as a standard measure—

just as in the Tower of London there is a length of alloy, kept as a specimen yard.

Our yardstick of time, then, is a regular motion—the drip of water from a storage vessel, the candle consumed by a steady flame, the swing of a pendulum, the escapement of a watch (where the water in the storage vessel has been replaced by the energy in a coiled spring), the vibrations of a crystal energized by an electric current, the regular leaping of atomic particles. Each of these movements, each one more regular than its predecessor, has been used by man in an effort to delimit time into accurate equal portions. Time is out of our reach: we cannot keep one of today's minutes as a measure of tomorrow's. So what we do is to measure time in terms of the number of events which occur in it. Our pendulum swing or our quartz-crystal vibration is such a standard event.

The first standard events of which man became aware were light and dark. The division between them had very blurred edges; since faculties were most exercised in daylight, this appeared the norm, and the night which interrupted it became the measure of time. It still is, for instance, in the word fortnight—fourteen nights; though "seven-night," (or sennight) for week was already becoming old-fashioned in Shakespeare's day. The discovery that while night and day varied in length, their sum was constant, was a considerable feat of observation. So was the discovery of the moon's regularity.

These two observations were the foundations of all calendar science. But it is difficult for the modern mind to realize the extraordinary effort of thought which they entailed. The first white men to go among the Pawnee Indians found that some of the hottest disputes at their campfire councils resulted from varying opinions as to which month it was; and among primitive tribes even the number of months in a year was a subject of debate.

One explorer obtained from the same group of Indians figures as widely separate as three and one hundred when he asked them: How many months has your year? The tribesmen had much the same ideas of numbers as the natives who were reported to count in terms of three quantities—"one, two and plenty." Even so, there was a nucleus of more exact knowledge in one or two families, who thus became known as "wise men."

Knowledge of the stars among primitive peoples is often handed down from father to son and not shared with the tribe. In Borneo there are rice-growing villages where one man has the job of watching the skies in order to choose the correct planting times. So important is this job considered that he is relieved from all other duties and is given a share of the crops. The Astronomer Royal today might be said to occupy a similar sort of position. It is noticeable throughout history that skill in sky-watching is attainable only by a very few people and that they always form a class apart.

To observe the movements of the sun and stars throughout their year it is obviously necessary to have fixed points. This need among ancient peoples led to the creation of towers, monoliths, pyramids, and flat stone tables. In Borneo, the rice planting tribes measure the sun's shadow by a long, straight, round pole of hardwood which they maintain erect by careful checking with primitive plumb-lines. They are also extremely careful that it shall not sink into the ground, though a

sinking of the ground itself has been known to deceive them. As soon as the shadow begins to shorten it is carefully watched and at length the announcement comes that the time for planting is near.

The builders of Stonehenge pursued much the same sort of calculations. But here the element of human sacrifice crept in, a horror quite foreign to the minds of many far more primitive communities.

The earth's journey round the sun, which produces the four seasons, took much longer to realize than the more obvious movements of the moon; the understanding of the seasons had, of course, the highest practical value since it governed seedtime and harvest. Astronomy was necessary to the early civilizations of the Nile valley, for example, in order to predict the coming of the floods since sowing must be done in readiness for them. The need to replace landmarks accurately when the waters subsided led to the growth of geometry.

But though great mathematical feats were performed by the first sky-watchers, the movements of sun and moon proved numerically most inconvenient, and their lack of commensurability sowed the seed for later calendar troubles—those of the Mohammedans, for instance, who still use only the moon. Neither the year nor the month is an exact whole-number multiple of days; and the twelve lunar months total only 354 days as compared with the 365 of the solar year. The fact that the year is 365 days, plus an awkward fraction, presents obvious difficulties.

In ancient Egypt the priesthood controlled the calendar, which in almost all civilizations is a religious ritual. Nowhere more so than in Rome. In Julius Caesar's day it was already noted that the official calendar was out of step with the natural year, and the correction of the muddle was one of Caesar's most courageous reforms. In Rome, indeed, the calendar had become what in American slang would be described as a "racket." The priests had the power to insert days into it—feast days or a day of religious observance; and this they did often at very short notice, avowedly in response to astrological omens—but also in response to bribery or political influence. They could, for instance, be bribed by a debtor to secure him extra days of grace—since on holidays no business was transacted.

Caesar's calendar, which is called the Julian calendar in his honor, got rid of the moon entirely and took as its basis a solar year of 365¼ days. However, the astronomer Sosigenes, who advised Caesar, warned him that the fraction ¼ was inaccurate. The slight error, which Caesar decided to ignore, produced by the time of Pope Gregory a calendar ten days out of true to the seasons. In 1582 Gregory made his correction, but prejudice against Catholicism in Protestant England made it impossible for our government to follow a Papal lead, and not till 1752, by which time the ten days had become eleven, did the Parliament take action—while the mob, persuaded by orators that here was a Papist plot to cheat them out of eleven days of life, howled: "Give us back our eleven days!"

This brief history of our calendar gives you some idea of its chaotic growth. Besides the righting of mathematical errors, there have been repeated proposals for fundamental reform. The French revolutionaries, for instance, produced a decimal calendar. But this had the grave disadvantage of allowing only one day's

rest in ten. Auguste Comte, the originator of Positivism, suggested a year with 13 months of 28 days each. But no one liked the number 13, and, in any case, the reorganization required was too great.

Still, the confusion of our present system is hard to defend. The months have four possible lengths, some 30 days, others 31—and these in irregular order; and then there is February which contains either 28 or 29 days. There are, in fact, in terms of order of days, 14 variations of calendar year, and 28 different kinds of months. Hence accountants can never compare the figures for two periods exactly without adjustments. The working days in a month may vary from 24 to 27. The comparison is not simply a matter of allowing for fewer days, since the position of a day in the week has many commercial consequences. Christmas shopping figures, for example, have been shown to vary quite a lot in terms of the convenience of the shopping-day pattern surrounding the festival.

To illustrate the accountants' difficulties of comparison, take the last five Januaries: 1947—4 Saturdays and 5 Sundays; 1948—5 Saturdays and 4 Sundays; 1949—5 Saturdays and 5 Sundays; 1950—4 Saturdays and 5 Sundays; 1951—4 of each again. The half-year period affords similar confusion. In 1951 the first half of the year had 181 days, the second half-year 184. Calendar reformers point out that if the measurement of length, the meter or yard, showed such variations there would be a tremendous outcry.

We all know that when Christmas falls in the midweek it dislocates industry, and since technology tends more and more towards continuous processes this and other similar dislocations become ever more serious. The random shutting down of continuous industrial operations involves considerable losses. So does the absenteeism from midweek holidays.

The various proposals for calendar reform have now more or less crystallized in the program of The World Calendar Association, which proposes a year divided into four equal quarters each consisting of a month of 31 days followed by two of 30 days. Since this totals only 364 days, it is suggested that the 365th day shall be a special World Holiday, while in leap years there will be a similar special holiday at the end of June.

This new calendar, when instituted, will certainly make sense. Every year will begin on a Sunday and end on a Saturday, so will every quarter. And the changeover will be astonishingly simple, since only seven dates will be altered.

Clearly the best year for a fresh start is one when 1 January is a Sunday by our present calendar, and The World Calendar Association is making a big effort to attract attention to its plan in view of introducing the reform in 1956, the next year which begins on a Sunday.

The plan for calendar revision has had a considerable success in obtaining the support of commercial institutions in America, but England has lately had too many preoccupations, it would seem. Still, members of the United Nations have been steadily pressing to place the question on the agenda.

In logic the scheme has much to commend it, but whether logic alone can sway humanity to any fundamental change is a question. In the end the reformers will no doubt succeed, and add to the work of past geniuses—Caesar, Sosigenes, and Pope Gregory—a final tidying up.

Author Meets Critic

LEAP YEAR COMPLICATIONS

By Frances Brentano

LETTERS from readers of my article on Leap Year (in the December *Journal*) find fault with some of the material which I gathered in my rather exhaustive research. A professor of history questions the authenticity of the law supposedly passed in Scotland in 1288, authorizing maiden ladies to propose marriage to eligible bachelors in leap year. He is right in saying that "the imitation of old English is too modern for 1288." However, the law in question has been repeatedly cited by historians for nearly a century. The earliest reference to it that I was able to find is in the British "*Illustrated Almanac*" for 1865, where it is ascribed to "her most blessed majesty, Margaret," with the date of the law fixed at "about the year 1288." (Margaret, the "maid of Norway," was only five years old in 1288, and had never set foot in Scotland. The Scottish government was in the hands of regents for the infant queen. Margaret sailed from Norway in 1290, and reached the Orkneys, where she died a somewhat mysterious death at the age of seven years.)

A specialist in Egyptian history takes issue with Samuel Zovello's theory about modern playing cards being derived from weekly Egyptian calendars. His letter says: "The week had no part in ancient Egyptian time-reckoning, and the ascribing of a 53d card—now the joker—to a 365th and 366th day of the year is hardly compatible with the Egyptian system of intercalation. If there is any basis to Zovello's theory, it must date from a very late period in Egyptian history—perhaps the fifth or sixth century A.D., and it thus becomes a part of gypsy lore rather than authentic history."

I fell into error, as several correspondents politely pointed out, in over-simplifying my answer to the question "Why did Caesar insert his quadrennial leap day in February?" (I said: "February was the last month of the old Roman year; leap day was just tagged onto the end of the year.") It is true that February was the last month of the old Roman year, but Caesar did not actually put leap day at the end of the year. He inserted it in the middle of February, immediately after the "sixth day before the calends of March," and therefore it was called a "second sixth" or bissextile day. The reason for selecting this spot is a long story, involving the mysterious intercalary month of Mercedonius.

An astronomical student at the Mount Wilson Observatory in California points out that my caption, under the reproduction of the Christopher Columbus table of eclipses (taken from Zacuta's "*Perpetual Almanac*"), is not quite accurate, and that the table itself contains several misprints and errors of computation. The depth of immersion of the moon, on the occasion of this Leap-Year Day eclipse in 1504, was $1\frac{1}{3}$ of the lunar diameter, instead of $1\frac{1}{4}$, as I incorrectly rendered it. The minor misprints and errors in the facsimile are, of course, the fault of Zacuta or his printer.

CHANGES AT UN HEADQUARTERS

By Essy Key Rasmussen
Assistant Director of The World Calendar Association, International

IN charge of calendar reform matters at the UN headquarters in New York City is the new Assistant Secretary-General for the Department of Social Affairs, M. Guillaume Georges-Picot, who previously was the French Ambassador to Argentina. He succeeds M. Henri Laugier, eminent French scientist who resigned his post last April, after serving since 1946. As is well-known, M. Laugier was an outspoken friend and advocate of The World Calendar; it is to be expected that his successor will build constructively on the foundations so firmly established during the past five years.

M. Georges-Picot is a career diplomat with a brilliant record and a flair for languages. He was born at Etretat, a lovely little watering place on the English Channel near Havre, in 1898, and is a graduate of the School of Political Science and the Law College of Paris. He served in the French Army during World War I and began his diplomatic career in 1923, serving in Europe, Asia, Africa and America. He is fluent in English, Russian, Spanish and German.

In accepting appointment to the staff of Secretary-General Trygve Lie, he said: "After having traveled the world over on various diplomatic missions, I have come to the conclusion that the UN is the best hope for the cause of world peace and the promotion of the welfare of the peoples of the world. Therefore I am happy to join this staff, and I shall do my best to assist this great work."



M. Georges-Picot

One of the many friends of The World Calendar at the UN is Señora Ana Gajardo Figueroa of Chile. She is perhaps best known to the world as an ardent advocate of equal rights for women. Two years ago in her native Chile, this former teacher of English and philosophy and general superintendent of Chilean high schools found cause for personal satisfaction

when Chile granted votes to women. In recognition of her work, the UN General Assembly at its sixth session in Paris elected Señora Figueroa as the first woman ever to head a major committee of the Assembly. Born in Santiago, she studied at the State University there, later came to the United States for advanced courses at Columbia University in New York and Colorado State College.



The six principal figures of the United Nations General Assembly, at its sixth regular session in Paris, represented countries favorable to The World Calendar. Top, left to right: Luis Padilla Nervo of Mexico, president of the Assembly; Finn Moe of Norway, chairman of the Political Committee; Selim Sarper of Turkey, chairman of the Ad Hoc Committee. Below: Señora Ana Figueroa of Chile, chairman of the Social Committee; Max Henriquez-Urena of the Dominican Republic, Trusteeship; Thomas A. Stone of Canada, Administrative and Budgetary Committee.

APPROVAL SOUGHT FROM U. N.

By Harriet A. Lillie
Secretary-Treasurer, The World Calendar Association, International

ADVOCATES of calendar revision throughout the world will concentrate their efforts this year on obtaining further measures toward adoption by the United Nations. A resolution to this effect was unanimously passed at the fifth annual meeting of The World Calendar Association, International, held in New York City on 15 January.

Countries represented at the meeting were: Argentina, Australia, Belgium, Canada, Cuba, Dominican Republic, Ecuador, France, Greece, Japan, Netherlands, New Zealand, Norway, Panama, Peru, Philippines, Salvador, Spain, Switzerland, Turkey and the United States.

Officers of the international organization were re-elected as follows: President, Elisabeth Achelis; Vice-President, Charles S. McVeigh; Secretary-Treasurer, Harriet A. Lillie.

The President, in her opening address, pointed out that the most active Affiliates during 1951 were Canada, France, Japan and the Philippines. In all four of these countries there was dynamic leadership which insisted on getting something constructive under way. The President said that Canada was fortunate in having at the head of the movement the vital and enthusiastic Arthur J. Hills, whose personal presence at the annual meeting was an inspiration to all the other delegates. In France, the indefatigable champions of calendar reform are the veteran journalist, Paul-Louis Hervier, and his distinguished associate, Abbé Chauve-Bertrand; under this leadership the French Affiliate has been able to marshall a highly influential group of governmental and industrial personalities. In Japan, Dr. Imoto of the Osaka Planetarium has inaugurated an ambitious plan to make calendar reform an integral part of the reconstruction program in his country, first, through the schools and colleges, and second, through the distribution of an attractive and comprehensive booklet to key persons in government and industry. In the Philippines, leadership is in the capable hands of Ramon Caro, head of a large commercial enterprise; his 1951 visit to New York had as one of its purposes conferences at The World Calendar headquarters; since his return to Manila he has renewed his calendar reform activities with fresh enthusiasm.

Looking forward to the year 1952, the President predicted new and resultful activities in Turkey—which was for the first time personally represented in the annual meeting by the distinguished Dr. Nuzhet Gokdogan, Professor of Astronomy at Istanbul University, who is at present in the United States doing research work at the University of Michigan and at Palomar Observatory. Other countries where aug-

mented campaigns for calendar reform are expected in 1952 include England, Panama and Cuba.

Detailed reports, submitted by nearly all the affiliated organizations, included the following highlights:

Australia. Dr. C. W. Allen, head of the Australian Affiliate for several years, resigned in September, 1951. He left Australia a month later to take up an appointment as Perren Professor of Astronomy at the University of London. In his letter of resignation, he wrote: "I would like to say how much pleasure and stimulation I have gained from my association with The World Calendar movement. The work must go on, and I am looking forward to its complete success before too much time has passed." The new Australian Chairman is H. J. M. Abraham of the Commonwealth Observatory in Canberra. He is the official in charge of Time Service and related work in the government observatory, and has been an active supporter of calendar reform for many years.

Brazil. In the last few years The World Calendar Association has been fortunate in having as the head of its Brazilian Affiliate the distinguished scientist and naval leader, Rear Admiral Radler de Aquino. For reasons of health and because of the pressure of his official duties, the Admiral felt compelled to resign under date of 5 March 1951. This news was conveyed to The World Calendar Association, International, by letter, and later in a personal visit from the Admiral's son, who said that his father hoped to nominate a successor at an early date.

Admiral de Aquino for more than a quarter of a century has been the editor of the Universal Nautical Tables issued by the Brazilian Navy. A new edition of this work was in preparation during 1951. These tables of navigation, which are published in French and English as well as Portuguese, are known to men of the sea as the "Aquino Methods," a short cut in nautical observation. Admiral de Aquino is an honorary member of the American Institute of Navigation, the British Institute of Navigation, the French Marine Academy, the Portuguese Academy of Sciences, the U. S. Naval Institute, the Argentine Society of Geographical Studies and the Naval Technical Institute.

Canada. The year 1951 was the most active and resultful in the history of the Canadian Affiliate. In February, Chairman Hills began an intensive effort to obtain positive action from Canadian business and labor organizations. There were meetings with officials of the Canadian Chamber of Commerce, the Ottawa Board of Trade, and addresses before the Rotary Club of Quebec and the Brantford Rotary. Interest was shown by Canada's delegates to the Santiago session of ECOSOC.

Early in April the three large labor organizations of Canada made a decisive move in favor of The World Calendar. These three groups—the Trades and Labour Congress of Canada (AFL group), the Canadian Congress of Labour (which includes some CIO unions) and the Canadian and Catholic Confederation of Labour—together represent about 85 per cent of Canadian organized labor.

The next important development of the eventful year came through the Toronto Board of Trade, whose executive council, after a comprehensive discussion of the whole subject of calendar reform, decided to request the Canadian Chamber of Commerce to appoint a special committee for the study of The World Calendar, with a view to placing the subject before the 687 member Boards and Chambers of the organization for definite findings and decisions. . . . Within a month, the Canadian Chamber of Commerce had taken the suggested action, and on 22 May it sent out to all its members a serial letter with a copy of the Committee's favorable report. The result was active interest throughout the country, with many groups instructing their delegates to support The World Calendar at the Chamber's 22d Annual Convention in Quebec in October.

At Quebec, then, came the fruits of four years of intensive effort. The motion to approve The World Calendar was carried without a single dissenting vote. On 20 November the Canadian Manufacturers Association re-affirmed its earlier endorsement of The World Calendar. Mr. Crombie, the Association's President, wrote the Right Honorable L. S.

St. Laurent, Prime Minister of Canada, as follows: "I beg to advise you that the Executive Council of the Canadian Manufacturers Association at a meeting in Toronto re-affirmed its previous endorsement of the 12-Month Equal Quarter World Calendar, and respectfully requests the Government to endeavor to advance adoption of this new World Calendar by action through the United Nations."

Canada's desire for international action on calendar revision was implemented during the summer by R. P. Jellett, one of the country's delegates to the International Chamber of Commerce meeting in Lisbon. Mr. Jellett reported that he had spoken at this meeting and had presented "Canada's desire for action on The World Calendar." In November the Council of the International Chamber of Commerce, meeting in Paris, was informed of the Canadian Chamber's approving resolution.

China. At the present time the Chairman of the Chinese Committee, Dr. Ch'ing-Sung Yu, is in the United States as a member of the staff of the Harvard High Altitude Observatory at Boulder, Colorado.

The most distinguished Chinese advocate of calendar reform, Dr. Chu Chia-Hua, is a refugee on Formosa. He is one of the Honorary Presidents of the World Federation of United Nations Associations. In August, 1951, he presided at a Formosa meeting of the Academia Sinica, an organization of learned men similar to the French Academy in Europe. All of those in attendance were exiles from their native land, who had accompanied the Nationalist government. The subject of their symposium was Calendar Reform.

The result of the meeting was a full endorsement of The World Calendar, and a recommendation urging speedy action to adopt it internationally. A complete report of the Symposium, in English, has been published in a 44-page booklet by the Hsin Sheng Printing Works in Taipeh, Formosa, and is available through the Chinese Association for the United Nations.

Cuba. New leadership for the calendar reform movement has appeared in Cuba through a statement from Dr. Cosme de la Torriente y Peraza, President of the Cuban delegation to UNESCO. This distinguished jurist and diplomat is a former Cuban ambassador to the United States, and was president of the Fourth Assembly of the League of Nations in 1923. As one of Cuba's chief "elder statesmen," his declaration to The World Calendar Association has high significance: "I shall be happy to offer your organization my cooperation in connection with the reform of the calendar."

Masonic lodges in Cuba continue to show a keen interest in calendar reform, as a result of the activities of a former president of the Cuban Academy of History, Tomas Justiz y del Valle, who has distributed reprints of an address made before the Havana Masonic fraternity on this subject. "We like to hope," he says, "that our zeal in support of calendar reform will spread to Masonic groups in other countries, and will thus be helpful in speeding world acceptance."

England. Rear Admiral Beamish, former Chairman of the British Affiliate, died 2 May 1951, and a new Chairman has not yet been named. Leaders who took a public position on calendar reform during the year 1951 included Miss A. Ruth Fry, the famous head of Quaker Refugee relief for 30 years; Lord Merthyr, a member of the House of Lords; Gordon Tankey, former president of the Royal Meteorological Society; Reverend W. Stanhope-Lovell, speaker at service clubs in the area around Westcliff-on-Sea; Professor Lancelot Hogben of Edinburgh; James Avery Joyce of London; Harold Watkins, author and radio scenarist, and many others. Mr. Joyce is the author of an interesting pamphet on calendar revision, which appeared in June.

Miss A. Ruth Fry has been appointed a member of the World Advisory Committee of The World Calendar Association, International. In stating her position on calendar reform, she said: "By making a change to The World Calendar, we shall forge one more link of world-mindedness. Why the delay in adopting such a meritorious reform? The answer to this pertinent question is summed up in the one word—inertia. It is a very curious fact that there is a strong instinct in man to prefer darkness to light; we have a rooted objection to change."

France. Study of calendar reform by AFNOR (Association Française de Normalisation) continued with two formal sittings of the special committee, which reached no definitive solution but will again assemble early in 1952 to make its final reports. Meanwhile one of the committee members, delegated to give a complete résumé of the proceedings for publication in the AFNOR *Courrier de la Normalisation*, completed his work and supervised the editing and printing of his exhaustive and handsomely illustrated monograph. The author was Abbé Chauve-Bertrand, already well-known to all Affiliates as the ablest French advocate of The World Calendar. His monograph attracted widespread interest and comment. It was reviewed copiously by newspapers and learned journals of France and Belgium. It was in such demand that copies of the *Courrier* were soon exhausted, as was a special supply of 5,000 reprints. Two other magazines in special fields, reprinted the entire monograph—the *Bulletin des Horlogers* and the *Bulletin des Papetiers.*

There can be no doubt that the AFNOR study has awakened a wider interest, especially among practical and business people, than any calendar reform activity since the time of Flammarion. It is hoped that this awakening will spread to official, diplomatic and international circles, and will result in France taking a positive leadership toward world adoption of the new calendar.

The return of M. Henri Laugier to France gives the French Affiliate another powerful friend. His long tenure at the United Nations, as an assistant to Secretary-General Trygve Lie, gives him an entree and the ability to deal with such international questions as calendar reform.

Honduras. The weekly publication *Tegucigalpa* has continued its campaign on behalf of The World Calendar, under the leadership of Rodolfo A. Hernandez. He writes: "Honduras is one of the countries which has already indicated approval of The World Calendar. We see that many advantages are to be obtained through the use of this invariable and perpetual system. It will benefit especially industry, trade, banking and international relations."

Japan. The report from Japan noted an aroused interest in calendar reform during the year 1951. Late in the previous year, Japanese schools suddenly became calendar-conscious, through the publication of a supplementary reader by Dr. Kiyoshi Yabu-uchi of Kyoto University, dealing entirely with "Life and Our Calendar."

A concentrated effort on the part of the Affiliate to secure official endorsements of The World Calendar began in 1951. The officers of the Affiliate also undertook the publication of an 18-page booklet on The World Calendar. This was successfully completed before the end of the year and is now being circulated to important organizations and people.

Netherlands. A new nucleus of interest in The World Calendar appeared during 1951 at Hoorn in North Holland, twenty miles from Amsterdam. Here a group headed by a wide-awake educator, W. B. Rombouts, has undertaken a study of calendar reform and an aggressive campaign of promotion. They are using such media as their local newspaper, the *Signall,* to arouse interest.

New Zealand. No additional activities were inaugurated in 1951 by the New Zealand Affiliate, headed by Dr. I. L. Thomsen of the Carter Observatory at Wellington. "It cannot be denied," reports Dr. Thomsen, "that in the present state of domestic and international politics, we are having the utmost difficulty in interesting influential people in this matter. Nevertheless, we keep at it. I hope to get the support of the New Zealand National Commission of UNESCO. This is an influential organization which should take a prominent part in the work of activating calendar reform."

Norway. Under the veteran chairmanship of Major K. S. Klingenberg of Oslo, the Norwegian Affiliate has continued throughout 1951 as a center for information on calendar reform, and a rallying point for supporters of The World Calendar. Copies of the *Journal of Calendar Reform* are regularly distributed to the principal newspapers of Norway. Contact is maintained with other publications, both popular and scientific. In official circles,

Major Klingenberg has kept in close touch with the staff of the Ministry of Foreign Affairs and conferred with its officials on support of calendar reform in the UN General Assembly and in the Economic and Social Council. He anticipates that some results of these contacts may be forthcoming in 1952. Norway has long been officially committed to support of The World Calendar; in 1947 its delegate seconded the draft resolution offered in ECOSOC by the Peruvian representative.

Major Klingenberg is a noted Norwegian topographer and director of the National Ordnance Survey for more than 20 years. He was head of the Norway-Finland boundary commission in 1925 and the Norway-Sweden boundary commission in 1929-30.

Panama. During 1951, Dr. Juan Rivera Reyes of the Panama Society for the United Nations (a member of the World Federation of United Nations Associations) has been working on a text of a pamphlet which will explain calendar reform to the Spanish-speaking peoples of the Americas. Dr. Reyes' activities at the Fifth Plenary Assembly of the World Federation of United Nations Associations in September, 1950, have continued to be influential. They resulted in further discussion at the Sixth Plenary Assembly, in Stockholm in August, 1951.

Peru. Under the able leadership of Luis Montero y Tirado of Lima, the Peruvian Affiliate has kept up its close contacts with Peru's international leaders, who have long maintained a positive and an affirmative position on world adoption of calendar reform. Among the most influential supporters of The World Calendar is Dr. V. A. Belaunde, President of the Peruvian delegation at the United Nations. Another is Dr. T. Cabada, head of the Peruvian delegation to ECOSOC. An August report from Montero y Tirado says: "I conferred with Dr. Belaunde this week, and he spoke enthusiastically of The World Calendar. He has long been convinced of its advantages and hopes that it will find a place in the next agenda of the UN Assembly. Whenever it reaches the voting stage, he will act for it with the full approval of the Ministry of Foreign Affairs."

Philippines. Ramon Caro, Chairman of the Philippine Affiliate, visited the United States during 1951, and spent some time at the headquarters of The World Calendar Association, discussing the progress of the movement in his country. Since his return to Manila, he has continued his activities in the press and through influential groups. His principal project for 1952 aims at securing a supporting resolution from the Congress of the Philippine Government, instructing its United Nations delegate to support The World Calendar. Mr. Caro has discussed the plan with several Congressmen and has had encouraging replies from several of them.

Salvador. Among the enthusiastic supporters of The World Calendar in Central America is N. Viera Altamirano, head of the Affiliate in Salvador. He is editor and publisher of *El Diario de Hoy*, the newspaper with the largest circulation in Central America. Reporting on the year's progress in his country, he noted that during the last few days of the year 1951 the Ministry of Foreign Affairs and the Ministry of Finance had taken note of proposals to bring calendar reform again before the Economic and Social Council of the United Nations, with a view to positive international action in 1952. The correspondence quoted prominently in *El Diario* stressed that "the new calendar will make possible much saving in time, money, energy, thought and material, now so needlessly wasted with the present changeable calendar—savings that can be used for worth-while progress toward human advancement and improvement." It was also pointed out that "adoption of The World Calendar can demonstrate to the world that unity, agreement and cooperation among nations are possible here and now: cooperative action on such a non-political, unbiased and unselfish project will serve as a precedent and stimulus for united action on other international proposals."

Spain. Formation of a committee to support The World Calendar is being undertaken by Ramon Ximenez Gil de Avalle, head of the Spanish Affiliate in Barcelona. The Spanish Chairman had hoped to visit the United States and make a personal appearance at the Annual Meeting of The World Calendar Association, International. But in

December he found that his business would not permit him to leave Barcelona. Instead, he sent his best wishes and hopes for a successful progress toward the adoption of calendar reform by 1956.

Stockholm Meeting. Calendar Reform was prominently on the agenda of the Sixth Plenary Assembly of the World Federation of United Nations Associations, held in Stockholm during the last week of August, 1951. Approval of The World Calendar came from the delegations of China, Cuba, Argentina, Panama, Chile and Germany. The Netherlands delegation stressed the "vast importance" of the subject and urged appointment of a "Study Committee" of experts in economic, financial, religious and social affairs, to consider all phases of a change in the Gregorian system. Australia reported an active interest, but explained that their official consideration of the question had not yet been completed. Cuba presented a resolution voted at Havana in April, urging international adoption of The World Calendar. Panama and Chile repeated their previous endorsements. Argentina declared: "We find the idea both sound and practical. We are delighted to give our wholehearted approval."

Turkey. "We are certain that the Turkish Government will give every support to the international activities of our organizations," reported Professor I. A. Dereoglu, head of the Turkish Affiliate. Calendar reform, he said, has many supporters in his country. "Some of them," he added, "are real enthusiasts. Others adopt a waiting attitude: they argue that calendar reform is an international project which should be launched and accepted first by the United Nations, and then by the member countries."

Professor Dereoglu is confident that there will be no religious opposition in his Moslem country. He has gone into this matter intensively, and reports: "The Moslem faith is most liberal and in Turkey its followers are always open-minded on any subject that makes for national progress. We can be sure that not only the government will support The World Calendar, but also the various cultural groups which make up our people. Public opinion will favor it, the press will approve it, and when presented to our Parliament there will be no religious or political difficulties in the way of speedy ratification. The new Turkish government and its party leaders have a thoughtful and liberal policy toward reform in every branch of social, economic and scientific matters."

Professor Dereoglu delegated as his representative at the Annual Meeting of The World Calendar Association, International, Dr. Nuzhet Gokdogan, a professor of astronomy at Istanbul University, who is currently in America, at the University of Michigan Observatory in Ann Arbor.

Dr. Gokdogan made some interesting informal remarks, supplementing the formal report from her country. She spoke of the astronomer's attitude toward calendar reform, and then made suggestions regarding general international activities on behalf of The World Calendar. She volunteered to assist in bringing this matter to the attention of the international organizations of University Women and of Soroptimist Clubs—in both of which she is an active officer. She spoke persuasively on the subject of the semantics of the calendar reform movement, suggesting particularly that the phrase "calendar revision" was a more accurate and persuasive term than "calendar reform."

Dr. Gokdogan will again visit The World Calendar headquarters in March, on her return from Michigan and California to her home in Turkey. En route she plans to spend some time in Paris with Madame Flammarion, the French astronomer whose husband was for many years a world leader in the movement for calendar revision.

United States. Close to a thousand names were added to the membership list of The World Calendar Association during 1951. Many of these new members were teachers of science, who came into the Association through the cooperation of the National Science Teachers Association. This organization circularized its 15,000 members with literature discussing calendar reform, and urged that instruction on The World Calendar be included in the teaching of science in American schools and colleges. The result was a gratifying emphasis on this subject in many educational centers.

The main purposes of The World Calendar Association, in its corporate charter,

are *educational* and informational. Its aim is to diffuse widely a knowledge of the calendar and its deficiencies, together with the best method whereby these deficiencies can be readily and conveniently remedied by means of The World Calendar. The Association also seeks to encourage and undertake *research* in all phases of this field, and to publish in readily accessible form the results of such research and the progress of revision. It maintains a close liaison with many international bodies which are engaged in activities relating to calendar reform; such as the United Nations, the International Chamber of Commerce, and the governing bodies of other world groups.

The Association is not a lobbying organization, and its legal status (as a tax-exempt, non-profit-making, educational corporation) forbids any such activity. This fact is sometimes not understood by its members or the general public, when demands come from individuals that the Association take the cause of calendar reform into the halls of Congress.

The year 1951 was notable in that the State Department, in Washington, undertook a thorough re-examination of the subject of calendar reform, and delegated Mr. James F. Green to deal hereafter with matters relating to this subject.

As a result of the Department's re-examination, three specific decisions were reached: first, that the State Department will not concern itself with the religious aspect of calendar reform; second, that the Department will not take definite action toward international adoption of a new calendar without mass popular support within the United States as demonstrated and expressed through Congressional channels; third, that in spite of this currently negative attitude, the Department is "sympathetic" to the efforts on behalf of The World Calendar, and approves the supporters of revision as "seeking to strengthen and improve the patterns of world understanding."

Of particular concern was the second decision—that the Department of State believes it should have a more positive "popular mandate," expressed through Congressional channels. Most supporters of calendar reform feel that this decision was inept and ill-advised. A similar situation arose in England, where Lord Merthyr characterized the government's demand for a popular mandate as "pernicious." He added this sharp comment: "I think it is the duty of all governments to make changes that are beneficial to their countries. It is going to be a long fight to get around the pernicious doctrine that because there is not a loud demand for reform in this country, nothing should be done. This dangerous doctrine is, I am afraid, all too common."

Calendar reforms in the past were never made effective by the voice of the people or popular demand, but by influential leaders or rulers. Today, the democratic principle is manifest in that all the various nations in the international organization of the United Nations participate in the deliberation and decision of calendar reform and not, as in the past, by one nation, or one ruler, or one organization or one religious institution.

A letter, recently received from Professor Joseph E. Avent of the University of Tennessee, says: "Most of the important legislation enacted by Congress in the last twenty years was enacted without any 'popular demand' for such legislation. There was no 'popular demand' for participation in World War II; there was none for the increase in taxes, nor for the many tax bills since 1939; there was no 'popular demand' for price control, nor for wage raise; none for the big money-spending projects. Yet, the Congress went ahead and tried to do the best thing for the people, just as our delegates to the United Nations ought to do now. The 'popular mandate' comes later in approval of the people. There was never an advance 'popular demand' even for drawing up the Constitution of the United States, nor the United Nations covenant. Leaders are supposed to lead, as our forefathers did, and go ahead and do what is best for the people. Popular approval will come, when the people observe the excellence in meeting their own needs, of which they often were not previously aware."

In the international field, a significant development of the year was a revival of interest in calendar reform at the biennial Congress of the International Chamber of Commerce in Lisbon. As far back as 1910, the International Chamber was a world leader in demanding calendar reform, but after 1933 and in the intervening years of war and dissension, the organization's interest waned or at least lay dormant. At the Lisbon meeting,

10 June, however, the subject was again brought to the front by the Canadian delegate, R. P. Jellett. Speaking in the name of Gerald R. Ryan, chairman of the Canadian Council, Mr. Jellett asked that the I.C.C. make a new study of the advisability of endorsing The World Calendar. Lord Runciman, representing Great Britain, suggested that Mr. Jellett's request be referred to the Executive Committee, and this suggestion was adopted.

The Executive Committee in due course transferred the whole matter to the Council, with the recommendation that the Council ask the Commission responsible for drawing up the 1952-1953 program of work to consider the possibility of placing calendar reform in that program.

The unwinding of all this complicated procedure involved meetings in London and in Paris, with the final result that the initial impulse in favor of action on calendar reform was dissipated and the Program Commission laid the matter on the table, owing largely to the failure of the United States delegate to support the Canadian initiative. In an explanatory letter Norman S. Taber, managing director of the U. S. Council of the International Chamber, wrote: " I regret very much that more concrete action was not taken at the I.C.C. meeting. As you have already been informed, the matter was brought up, and I personally urged that a definite position be taken—either that we do something about it, or that we notify you as a sponsor of this movement, that we did not feel it was appropriate to add the matter to our work program under present conditions. Unfortunately the matter was tabled, and no real action was taken."

About 200,000 pieces of literature were distributed during the year by the United States Affiliate. This organization also assisted in the publication of pamphlets by other Affiliates in England, Canada, France, Panama and Japan.

NEWS BULLETINS

OTTAWA.—Resolutions approving The World Calendar, and urging the Canadian government to advocate its early adoption internationally, were passed by the Canadian Construction Association at its 34th annual meeting on 23 January. As an employing group, the construction industry ranks fourth in Canada, after manufacturing, trade and transportation. The three other industries have already taken similar action in approval of The World Calendar, as have the great labor federations.

STOCKHOLM.—Agitation for calendar revision has gained new impetus in Sweden with the February action of the Riksdag approving certain alterations in the Swedish religious and holiday calendar. The changes, aimed at avoiding midweek holidays, include: (a) Sunday observance of the Annunciation, (b) a new Saturday holiday in autumn to be called All Saints Day, and (c) a new method for setting Midsummer Day, which will henceforth be celebrated on the Saturday falling within the period 20-26 June. The changes will become effective in 1953.

LOS ANGELES.—Paramhansa Yogananda, one of the foremost Indian mystics of recent years and founder of the Self-Realization Fellowship, died suddenly in Los Angeles on 7 March, while addressing a dinner in honor of India's ambassador, Binay R. Sen. Born in Gorakpur 60 years ago, he was regarded as the reincarnation of a celebrated mountain yogi of ancient times. He founded his first religious school in India in 1918. A few years later he moved it to Los Angeles and established it on an international basis. He was a long-time advocate of calendar revision as a force for world unity, and a few days before his death he wrote to the President of The World Calendar Association: "Please accept our best wishes for the final success of your life work, a noble endeavor to knit the whole world together by a single calendar."



JANUARY

MOON OF SNOW

January—Moon of Snow
Hear the mighty blizzard blow
The raging fury of his shrieks
Echoes in the mountain peaks
Moaning over the plateau
January—Moon of Snow.



FEBRUARY

HUNGER MOON

February—Hunger Moon
Frozen is the deep lagoon
Frozen are the fields of grain
Hunger walks across the plain
Famine stalks the field and prairie
Moon of Hunger—February.



MARCH

CROW MOON

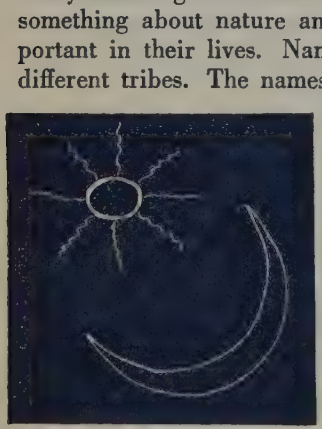
Now in March the Crow Moon glo
Melting are the winter snows
With a rumbling crush and quiver
Ice is breaking in the river
March wind blusters through the
And above the Crow Moon shines.

INDIA

By Craven Griffith fr

AMERICAN INDIANS used to, and in some tribes still do, identify their months by moons. Each moon has a name and a symbol. These names and symbols are really meaningful to the Indians, because they describe something about nature and the out-of-doors that is important in their lives. Names of the moons vary among different tribes. The names given here are those adopted and approved by the Am most nearly correct and 12-month calendar.

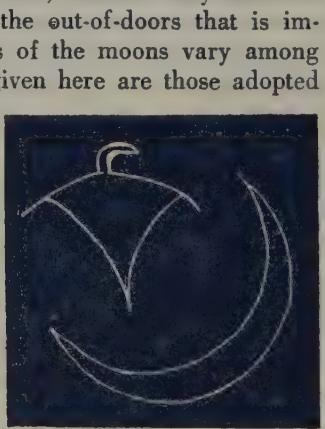
January, here called Cold Moon by many tri Moon, but also Awakin sometimes Grass Moon.



JULY

HEAT MOON

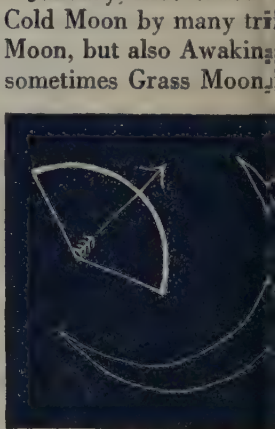
The Heat Moon rises in July
To cool the copper-colored sky
The sun, a flaming arrow, arched
Leaving field and meadow parched
The riverbed lies cracked and dry
The Heat Moon rises in July.



AUGUST

THUNDER MOON

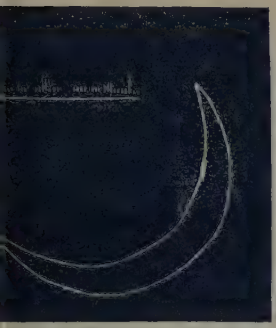
August—and a Moon of Thunder
Splitting night and day asunder
Lightning brilliant and reptilian
Flashing yellow and vermilion
And the sky is filled with wonder
August and a Moon of Thunder.



SEPTEMBER

HUNTING MOON

September—and a Hunting Moon
Quieter the laughing loon
The stinging arrow sings "beware
The rigid roebuck scents the air
Wary now the gray racoon
September—and a Hunting Moon.



APRIL

GRASS MOON

—See the Grass Moon glisten
g seedlings stir and listen
eir heads to thrive and flower
ed by sun and sudden shower
ed now from winter dreaming
—and a Grass Moon gleaming.



MAY

PLANTING MOON

May—and shines the Planting Moon
Magic and enchanting moon
Coloring the furrowed plain
Soon to wave with yellow grain
Gold and silver softly slanting
May—and shines a Moon of Planting.



JUNE

ROSE MOON

A Moon of Roses shines in June
And sparkles on the blue lagoon
Where dragonflies by day had skimmered
And the summer sun had shimmered.
Drowsy daylight nods and closes
Yielding to a Moon of Roses.

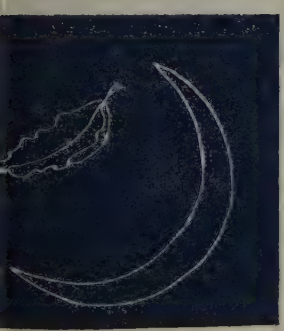
OONS

rican Girl Magazine

an Association as being
ly used in a recognized

ow, was also known as
was not only the Crow
Warm Moon. April was
Geese Moon. May was

Planting Moon or alternatively Flower Moon. June was Rose Moon, or in some cases Buck Moon. July was called either Heat Moon or Blood Moon; August was oftener Thunder Moon than Sturgeon Moon. September was Hunting Moon to some tribes, Corn Festival Moon to others. October was Falling Leaf Moon in most cases, but sometimes Traveling Moon. November could be either Beaver Moon or Mad Moon.



OCTOBER

FALLING-LEAF MOON

er, Moon of Falling Leaves
now the night wind grieves
s gentle, thoughtless sighing
them lifting, drifting, flying
nd gold the pattern weaves
er, Moon of Falling Leaves.



NOVEMBER

BEAVER MOON

November and a Moon of Beaver
Mild and mellow make-believer
Warm the night as Autumn closes
Mimicking the Moon of Roses
Yet the snow will follow soon
November—and a Beaver Moon.



DECEMBER

LONG NIGHT MOON

December and a Long Night Moon
December and a strong bright moon
Now the snows begin to thicken
Now the winds begin to quicken
Fan the fire—revive the ember
Through the Long Night Moon—
December.

LET CANADA TAKE THE LEAD

By Christopher Arden
From Toronto Board of Trade Journal, January 1952

CANADA, under Sir Sandford Fleming, led the North American continent in establishing Standard Time. Let Canada now take the lead in getting the simple, practical, effective World Calendar adopted. Let us end not only calendar confusion in general: let us end Gregorian calendar frustrations in particular. The case for calendar revision is unanswerable. The need is urgent. The returns will be wonderful.

We have been struggling with, and frustrated by, the Gregorian calendar for nearly 200 years. It is irregular, inconsistent, inconvenient and expensive. Its faults are multiple, manifest, remittent and monotonous. They are a nuisance to the ordinary man and a tribulation to business.

In a sentence, our standard calendar suffers from the clash between the seven-day week and the 52-week-plus-one-day year, and the complication of the quadrennial leap-year day. The extra days keep our dates in constant revolution through the days of the week. As a result of such revolving dates, the present calendar gives us 28 different kinds of months and 14 different kinds of years, all in irregular order. In statistical comparisons, our time-measuring system permits a difference of 11 per cent as a minimum between a 28-day February and a 31-day March, which may rise to 19 per cent owing to the incidence of Sundays and holidays.

It is clear that our present calendar, with its unequal months and quarters, and its shifting weekdays, causes vexations and confusions that touch all our living ways. This calendar is a hangover from a simple, slow, slack age, and is entirely unsuited for our complex, jet-propelled, close-integrated modern life.

We need a more efficient and streamlined timekeeping system. Other ages have thought the same. Frenchmen of the First Republic tried in 1792 to make a new calendar. But they gave the familiar months such names as Thermidor and Brumaire, began the year on 22 September, and started dating events from Year I of the Revolution. That scheme collapsed. Russia, after her revolution, tried out and discarded a curious five-day-week, six-month calendar.

Of recent years, since the turn of the century, some 500 proposals for revision of the calendar have been born and died. The Cotsworth plan, which proposed 13 months, had great vogue for a time. Another short-lived proposal was for four 35-day months and seven 28-day months. All these calendars involved such radical departures from the standard calendar that they were not able to get the public support which is necessary to make such proposals stick.

What was needed was a calendar revision that would keep all the best features

of the present calendar and eliminate its flaws. Way back in 1834, an Italian priest had thought of a way to make a year in which there would always be 52 seven-day weeks. In 1930 The World Calendar Association began to promote Marco Mastrofini's "World Calendar."

It differs from the present calendar in only two major respects. First, the 365th day is removed from the regular system of numbered dates (and in like manner the Leapyear Day is set aside). That produces a calendar year of 364 days, divisible exactly by seven to make 52 weeks, which repeat themselves in identical arrangement year after year. Second, the 52 weeks are divided into four equal quarters, with each quarter having 91 days or 13 weeks. To make the quarters match up precisely, the first month of each quarter has 31 days, and the second and third months have each 30 days.

The World Calendar, then, is really only a smartening-up of the present system. Actually it has only three brand-new dates: 30 February, 31 April, and Worldsday. One old occasional date becomes regular: 29 February. Three months which used to have 31 days have only 30. That's all very easy to take.

The World Calendar is thus quite simple. Every date falls always on the same weekday, even in leap years. The four quarters are identical in every respect. Because the 31-day months each have five Sundays, while the 30-day months each have four Sundays, every month contains uniformly 26 business days. It is a standard unvarying, balanced, regular calendar. It has been called "the greatest invention for time measurement since the ancient Egyptians hitched the calendar to the sun."

Man has long been afflicted by calendar headaches. Because it takes the world 365 days, 5 hours, 48 minutes and 46 seconds to go around the sun, he has always had great difficulty in trying to devise a perfectly symmetrical and satisfactory time system.

Earliest known calendar was used by the Chinese as far back as 2357 B.C., which was 200 years before Abraham and 1,500 years before Homer. The Egyptians had a system based on the flooding and receding of the Nile. It was the first calendar devised to renew itself every time the earth went around the sun.

About 45 B.C., Julius Caesar worked out a better system, but even it was complicated, irregular and awkward. However, the Julian calendar is still used in parts of Eastern Europe. There are also in current use a variety of Coptic, Iranian, Jewish, Chinese, Japanese, Arabian, Hindu and other calendars.

In 1582 Pope Gregory XIII took up the Julian calendar, which had become lamentably inaccurate owing to the error in Caesar's leap-year rule. To correct this error, Gregory made a slight change in the leap-year rule, and also ordered that 10 days be dropped out of the year 1582: 15 October followed 4 October.

The British peoples, however, persisted in using the Julian system, and it was not until 1752 that our forebears switched to Gregory's revision. By that time, the calendar was even more out-of-step with the seasons, so at the changeover Londoners went to bed on the evening of 2 September and got up on the morning of 14 September. It was the longest mass sleep on record. Workmen "lost" eleven days overnight, and the leaders of the Guilds (the labor unions of the 18th century) tried unsuccessfully to get the eleven days "lost" pay.

Who benefits by The World Calendar? It will help increase production and conserve time, money, labor, materials. Everybody will therefore benefit.

It will help improve planning and budgeting for home, civil, industrial and

church activities. Recreation experts will find it easier to arrange better sports schedules. Schools and colleges will have a more regular school year. Transportation executives will benefit by stabilization of holidays and simplification of travel schedules through synchronization of weekdays and month-dates.

Workers will benefit by the replacement of midweek holidays which cause absenteeism (to the tune of $400,000,000 lost pay per year) with week-end holidays. Governments will benefit from the equal quarters which make it easy to figure customs receipts, taxes, internal revenue collections, interest on government bonds—all of which now entail highly complicated and costly operations.

Retail business will benefit. There is always more shopping when Christmas is not in the middle of the week. In The World Calendar it will always be on Monday.

The World Calendar will, in fact, be of immense value to all business. Today, commerce and industry is so highly organized that exact statistical information is essential. Under the Gregorian calendar, in which no quarter, no particular month, is identical from year to year, annual comparisons of production and trade, taxes, prices, wages, are never accurate, without elaborate adjustments and explanations.

A Canadian government statistician has said: "All persons using records and statistics, would welcome accounting periods of fixed length and quality, which would make each month identical with the corresponding month of previous years." That is what The World Calendar does. Comparisons become constant, consistent and deductive. Statistics make sense.

It should be clear, now, that calendar reform is urgent. It should also be clear that The World Calendar deserves active if not aggressive support. What has been done to date?

The World Calendar Association has been successful in interesting the United Nations in The World Calendar. Its adoption was on the United Nations agenda in 1949. At that time, 47 nations unofficially supported the calendar; none opposed it. But a United States motion to postpone consideration because of lack of time was carried. It is interesting to know that Canada was against postponement.

The World Calendar Association is now pressing the U.N. Economic and Social Council to approve The World Calendar. Then, presumably, it would go to the General Assembly, with its 60 national delegations who in turn would have to get endorsement of such approval from their respective countries. Then all countries now using the Gregorian calendar, and agreeing to switch to The World Calendar, would make the switch on the next year in which 1 January was a Sunday.

Canada has taken a positive stand on The World Calendar. Both the Canadian Pacific Railway and the Canadian National Railway support it, and it is endorsed by such bodies as the Canadian Manufacturers Association, the Canadian Retail Federation, and trade unions representing 83.5 per cent of Canada's organized labor.

There is no rational argument whatever against calendar reform, and The World Calendar has been approved internationally by business, scientific, and professional organizations, and by churchmen of almost all faiths.

TIME TO CHANGE, SAYS NORWAY

Compiled from several letters, reports and articles
By Major K. S. Klingenberg

As Chairman of the Norwegian Affiliate of The World Calendar Association for many years, Major Klingenberg has been an energetic champion of calendar reform. From his headquarters in Oslo, he has sought to educate national opinion regarding the need for a better system. He has always been confident that the Norwegian government would in the future, as in the past, support international efforts toward this end. As Major Klingenberg explains in his opening paragraphs, Norway was one of the two leaders in proposing action on calendar reform at the United Nations in 1947.

IS it time to change the calendar? Norway's position in this matter has not altered since it first gave its vote in the League of Nations. At that time its delegate said emphatically that Norway would approve adoption of The World Calendar whenever it was accepted simultaneously by enough nations to make it internationally effective.

This is about as strong an endorsement as can be reasonably expected from one of the smaller nations. It will be remembered, of course, that in the United Nations (at the Economic and Social Council session of 1947), when the Peru delegation introduced a draft resolution for The World Calendar, the motion was seconded by the Norwegian representative.

For thousands of years, man's efforts to reckon time have been among his most annoying and unsatisfactory labors. His grim determination to find an answer to the problem of reconciling a handful of irreconcilable units of measurement was always admirable, but he was never able to reach a completely satisfactory conclusion.

He had certain positive astronomical facts to start with—such as the change between day and night caused by the rotation of the earth, the year with its changing seasons marked by the annual movement of the earth around the sun, the handy little 7½-day intervals created by the phases of the moon. But nothing he could do would bring these three elements into a smooth-working cooperative system. No amount of intellectual drudgery could make such variables agree.

So, down through the ages, men have compromised with their calendar problems. They have tried various solutions, all of which approximated accuracy to a greater or less degree. The Egyptians settled on a year of 365 days and let it wander gradually through the seasons until after 1,460 years it was back where it began. The Greeks muddled along with moon months and created the ingenious Metonic cycle to reconcile these time-intervals with the sun every 19 years. The Romans got all tangled up in a divided allegiance to sun and moon, until Julius Caesar came along and unscram-

bled things with ruthless hand. India originated a thousand calendars, of which at least twenty still survive. The old Vikings measured their years on rune-sticks and the Mayans had theirs engraved on thirty-ton stones to keep the tally intact. Japan and China vied with each other in inventing intricate systems of time measurement, to the utter confusion of modern historians.

Out of all this imbroglio emerged at last the calendar which the world uses today. It is a fantastic hodge-podge of ancient relics, prehistoric traditions and obscure nomenclatures. The names of the months and of the weekdays are complete absurdities: we go on calling December the "tenth month" in the face of 2,000-year-old facts; we can't agree among ourselves as to whether the last day of the week should be Saturn's Day (as in English) or Sabbath Day (as in French) or Sam's Day (as in German) or Bathing Day (as in Norwegian). We measure the length of the year with scientific precision, but we count our years from a grossly inaccurate epochal point, and we are so accustomed to the error that we see no discrepancy in the statement that Christ was born in the year 4 or 5 B.C.*

The division of time into weeks is of such ancient origin that it is obscured in the mists of pre-history. Men tried weeks of various lengths, varying from 5 to 15 days. The seven-day week was Babylonian in origin, and it survived tenaciously because it was based on the readily observable lunar segments. The Romans originally had a week of eight days, but later they divided the months into three segments marked by the illogical Ides, Nones and Kalends. Egyptians had a ten-day week, which was imitated by the French Revolutionary Calendar in a vague effort to apply the decimal system to the calendar. Ancient Scandinavians had a five-day week, revived for a brief period in recent history by the Soviet scientists.

The weekdays of antiquity had no special names, but were generally called by their number in the sequence. The naming of weekdays came in when astrology

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*The idea of dating years from the birth of Christ originated in the sixth century, with a Roman scientist-monk, Dionysius Exiguus. This industrious scholar was an indefatigable "fixer," intent on remedying deficiencies and irregularities in the canonical laws. But he was inexact, hurried and careless in his mathematics and historical research.

Prior to his time the Christian historians, unwilling to count "from the founding of Rome" (A.U.C.), had used "years of Abraham," dating them from the supposed birth-year of that patriarch, 2116 B.C. To establish the birth-year of Christ, Dionysius accepted a tradition which placed it in the 28th year of the Roman Emperor Augustus, but he made an error in calculating the reign of Augustus, figuring it as 727 A.U.C., whereas it actually began in 723 A.U.C. So when he called 727 the beginning of the Christian era he was at least four years off base, and Christ was born, according to the monk's own data, in 4 B.C., or perhaps earlier.

The Jewish historian Josephus says that Herod died shortly after an eclipse of the moon. The nearest such eclipse was in March of 4 B.C., so evidently the birth of Christ occurred some time before that date. Astronomers point to 6 B.C., because some interesting astronomical phenomena in that year may have been interpreted as the Biblical Star of Bethlehem.

Another annoying error that Dionysius made in installing his new era was his failure to put a zero year between 1 B.C. and 1 A.D. He called the 28th year of Augustus 1 B C., and the following year 1 A.D., and this is the reckoning we still have to follow. Absence of a zero year introduces an odd mathematical complication in counting periods extending from B.C. to A.D. For example, in 1930 American schools and colleges celebrated the 2,000th birthday of the poet Virgil, who was born in 70 B.C.; they were wrong, because they failed to remember the lack of a zero year—Virgil's 2,000th birthday actually came in 1931.

gained wide repute, and the astrologers helped their own prestige by labelling the days with the names of heavenly bodies—sun, moon and planets. Mars, Mercury and Saturn still survive in the French language. The Northern countries labelled their weekdays with the ancient names of their gods, and thus we have Tyr, Odin, Tor and Frigga still on our hands.

Thus we find the calendar burdened with many antiquated formulas. When they involve merely nomenclature, we can abide with them and not suffer much inconvenience. But they also involve certain unnecessary defects of a more serious nature, which in our modern world ought to be corrected.

It was about 1913 that the Swiss government first attracted European attention by taking an energetic position in favor of an improved calendar system for all the world. Its proposals to adjust the calendar, along the lines of the plan which has since become widely known as The World Calendar, were about to be presented officially (in the form of a draft treaty) in 1913; but the beginnings of a World War were fermenting, and before the Swiss proposals had got under way, they were smothered by the internecine developments of 1914.

The work begun by Switzerland was eventually taken up by the League of Nations in 1923. There was general international agreement on the desirability of a permanent and unchangeable calendar, but the precise method by which it could be legislated was not at all clear. The League officials decided to go on slowly toward the desired goal. They made gradual progress until in 1937 their proposal for The World Calendar was approved in principle by 14 nations. At least twice that many were needed for a clear majority. The League's strategy was to wait a few years more, until additional votes could be secured. Another World War intervened.

Now, at long last, the whole subject is before the United Nations and there is hope for action through this organization, although its diplomacy is much too slow for those who would like to see a more energetic campaign toward adoption.

In a time when it is feared that any day a new and frightful world conflagration may break out—when governments have many worries, when instability is prevalent in the economic sphere with wages and prices doing a continuous seesaw—it is understandable that our harassed leaders are reluctant to think favorably of changing established customs and patterns. Yet perhaps this is the easiest of all times to propose such changes.

It costs a little in mental effort to learn new things and to get accustomed to them. Many people prefer not to make this effort. They are given to dullness and delight in stolidity.

But if they knew what an advantage The World Calendar would be to them, they would—I think—demand its immediate introduction. It is something good that we can leave to posterity. And we can do it *now*, without leaving to our successors the necessary labor of legislating a change which is inevitable. Coming generations should not be inconvenienced with the burden of an inefficient calendar. If we make the change, they will benefit largely by our initiative.

ISRAEL'S CALENDAR CONFUSIONS

By Sulamith Rogoff

Writing from Jerusalem, the author gives a remarkably lucid picture of the conflicting calendar influences which are found in the new state of Israel, and the complicated adjustments which have to be made in reconciling the diverse systems used in that tidy little country—making its calendar situation one of the most intricate in the world. From the author's impartial vantage point in Jerusalem, the irregularities and deficiencies of the Gregorian calendar stand out with startling clarity. Revision of the civil calendar seems a desirable aim of progressive people. No final attitude toward The World Calendar has yet crystallized in the official circles of the Israel Government, but the author believes the road is open "for a fresh approach to promoting serious consideration by competent authorities in Palestine."

WITHIN a period of 30 years, most people in Palestine have made a jump of some 6,291 years, at least so far as their time-reckoning for official purposes is concerned. It was the year 1335 after the Hejira, according to the official Moslem calendar of the Ottoman Empire, when the Government of Palestine was taken over by the British, who immediately introduced the Gregorian calendar—according to which it was A.D. 1918. Thirty years later, the year A.D. 1948 suddenly became the year 5708 of the Creation of the World, when the Hebrew calendar was introduced—alongside the Gregorian—as the State of Israel took over the government of almost four-fifths of the area of mandated western Palestine.

To be sure, all this applied mainly to the time-reckoning for official purposes. The Moslem community in Palestine persisted throughout the days of the British mandate, as indeed it does today under Israel, to reckon its time according to the Moslem calendar. On the other hand, the Jews of Palestine under the mandate evolved a system of double-calendar. While most of them used the Gregorian system for day-to-day purposes, a not inconspicuous minority had the traditional Hebrew calendar in everyday use, for secular as well as for religious purposes. The Jewish autonomous public bodies in Palestine evolved the custom of dating by both calendars concurrently. This custom was inherited by the State of Israel and sanctioned "by practice," in the absence of any legislation or deliberate decision to this effect. All official documents in Israel have always carried a double date written, e.g., this way: "9th Tevet, 5712 (7.1.52)."

All these adjustments have resulted in one considerable innovation which conflicts with the traditional Jewish reckoning of time. The 9th Tevet is traditionally over at sunset, as are all other days of the Jewish calendar. The 9th of Tevet starts as the sun sets and lasts until the next

sunset, 24 hours later. The 7th of January ends at midnight. There is, then, a discrepancy of several hours between sunset and midnight, when, strictly speaking, 7th January should be designated as 10th Tevet. If, however, the Knesset (Parliament of Israel) voted a bill during this interval, the bill would still bear the date of 9th Tevet, 7th January, thus involving some complicated legal consequences. With the exception of Saturdays and religious holidays (which for religious purposes are still deemed to last between the two sunsets only), a radical change—not yet officially acknowledged—has crept into the traditional Jewish reckoning of time, under the influence of the Gregorian calendar.

This change is not the only one. A no less radical change in the traditional Jewish time-reckoning took place under European influence some time ago in regard to the smaller sub-divisions of time. Formerly the Jews divided the 24 hours of the day (and its preceding night) not into 1,440 minutes or 86,400 seconds, but they rather divided each of those 24 hours into 1080 parts and each of these parts into 76 moments. Thus one "part" worked out to be three and a third seconds, while a "moment" was 0.04 of a second. This division fell into complete disuse; its very existence is today wholly ignored by the Jewish public, and is known only to a handful of experts and rabbis. Together with the rest of humanity, the Jews have completely switched over to the universal division of hours, minutes and seconds.

Again, in ancient times, the Jews had at least twice modified vital elements in their time-reckoning. For many centuries they had been using, alongside their traditional time-reckoning, a different calendar, for civilian purposes, not unlike the present position of the simultaneous use of the traditional Jewish and the Gregorian. Then it was a calendar which started 312 years B.C., at a day on which a military victory resulted in the establishment of the Seleucid power in Palestine, Syria and Mesopotamia. That civil time-reckoning was in use among European Jews as late as the Middle Ages, when nothing but a dim memory of that no-longer relevant event was preserved.

Yet another instance of a change in the Jewish calendar is provided by the records of both the Old Testament and Archaeology. These clearly show that (as with the ancient Romans) the New Year of the ancient Jews used to start in spring (in March, in the case of the Romans, in Nissan in the case of the Jews), while today the Jewish New Year starts in autumn, having been transferred six months ahead.

Even the Hebrew names of the various months used to be different. All the later names by which the Jewish calendar months are now called—Nissan, Iyar, etc.—are of Mesopotamian origin and several convey names of Babylonian and Assyrian deities (not unlike the Roman month-names of March, January, etc.). Even earlier, there is evidence that the ancient names of the months fell into disuse, and in the later period of the First Commonwealth, the Jews used to call their months by numbers—the First, Second, Third, etc., month, just as today they call by numbers all weekdays, except Saturday: Sunday is in Hebrew "First Day" (*Yom Rishon*), Monday is "Second Day" (*Yom Sheni*).

It seems pretty certain that the transfer

of the first day of the year from the Spring Equinox to the Autumn Equinox was also done at the same time (on the return from Babylon) under Mesopotamian influence. The Autumn Equinox marked the New Year for many other peoples as well, including the ancient Egyptians, the Persians, the Phoenicians, the Carthagenians and the French under the Revolution.

The influence of Mesopotamia has indeed played a fundamental role in Jewish time-reckoning. Roughly speaking, the present Jewish calendar is a direct heir to the calendar of ancient Babylonia, which presents some basic, although probably incidental, similarities to that of China; while the Gregorian calendar is the direct heir of the ancient calendar of Egypt, which presents some basic, although probably equally incidental, similarities to the Inca calendar of Peru.

It seems certain that almost universally primitive people first reckoned their times by the phases of the moon. Only at some later epoch did they introduce the solar year, sometimes adjusting in the process the lunar reckoning to the solar. A typical case to this point was that of the highly efficient and precise time-reckoning of the ancient Mayas and Aztecs, who retained a parallel moon-calendar, for religious purposes, to their main solar calendar, while adjusting the first to the second. Similar adjustments are known also from the time-reckoning systems of other civilizations, such as ancient Arabia and India. Over 3,000 years ago, Hammurabi of Babylon followed suit by introducing a thirteenth month — the same "second Adar" which still persists in the Jewish calendar—for equalizing the lunar months to the solar year once every few years. In the fourth century B.C., the famous 19-year cycle, with seven 13-month years, based upon the equation of 19 solar years to 235 lunar months, firmly took root in Babylon. This is essentially the traditional Jewish time-reckoning up to the present.

Indeed, the traditional birth-place of Abraham is the Mesopotamian town of Ur, which seems to have been linked up with lunar worship. The Jewish time-reckoning has ever since remained predominantly lunar, with only a cumbersome adjustment to the solar year. The month invariably starts with the new moon; and the first day (or two days) of each lunar month has special significance in the Jewish religion. It is thus that one reads in the Talmud: "The sages have taught that when there is a solar eclipse, it is a bad sign to the nations of the world; when there is a *lunar* eclipse it is a bad sign for Israel, since Israel reckons the years after the moon, while the nations of the world reckon by the sun." Those Talmudic sages, of course, did not know that many other contemporary nations, including India, China and even Arabia—and, to an extent, the ancient Americans—computed their time after the same moon.

The only important element universally borrowed from the Jews by both Moslem and Christian calendars seems to be the division of time into weeks: concurrently with, but independently from, the division into months and years. Indeed, the week-series run quite independently from the general structure of months and years in all these cases—in a parallel, but uncoordinated, way.

The ancient Egyptians and Greeks, just like the French revolutionaries of some 150 years ago, divided their months into

10-day decades. The Aztecs of ancient Mexico had five-day "weeks." The Romans had hardly any division of days which could be construed as weeks. Today, the Jewish concept of the seven-day week has taken a firm root in most widely-accepted time-reckoning systems. Any opposition which Judaism in general, and the Republic of Israel in particular, might voice against the current plans for calendar revision would stem precisely from this point. It has been said that no change would seem acceptable to them, unless it leaves intact the present reckoning of time into weeks, with the consequently fixed recurrence of the Saturdays. The idea is that unless this reckoning in weeks is common to the whole of humanity, the observance of the Sabbath rest-day by the Jews would become badly complicated.

In actual fact, this may or may not be so, to a larger or smaller extent. There are, however, three facts which militate against such an attitude. The first is that world Jewry and the Republic of Israel acknowledge no legitimate loyalty on their part to the Gregorian calendar, nor to any other, except their own. If alongside the Jewish calendar they use the Gregorian in their daily life (for official, social and economic purposes) this is admittedly so merely for the practical purpose of keeping pace with the rest of civilized humanity. If the rest of humanity reform their calendar, as they did when they replaced the Julian system with the Gregorian, then it is up to them alone: and the Jews would instantaneously and unhesitatingly follow suit insofar as this general calendar is used by them for the sake of practical convenience. Their only ownership-claim, so to speak, refers to the Jewish traditional calendar. There, no reforms or changes are practically possible or foreseen, nor are they even mooted. It would be highly illogical, then, that Judaism should oppose a change in something which it admittedly does not regard as its own.

The second fact is that weekdays are not even fixed in the Jewish calendar. Sabbath (Saturday), for example, may fall upon any day of the Jewish month. Nothing would be changed, then, by the introduction of The World Calendar for civil purposes.

The third fact is that there already exists the very situation which some Jews, in Israel and elsewhere, would like to prevent by opposing the calendar reform. If the week-cycle reckoning is common to all calendars used by the followers of monotheistic faiths, the month-and-year cycle is not. Consequently, even today the various Jewish holidays, which are computed after the traditional Jewish calendar, are never "fixed" in the Gregorian calendar. They are fixed in the Jewish calendar alone. Thus, the Jewish New Year was 3 October in 1940, 22 September in 1941, 1 October in 1951 and it will be 20 September in 1952.

Furthermore, the present simultaneous use in Israel of the two calendars already gives rise to a rather complicated state of affairs—which will not be made any more complicated if the Gregorian calendar is replaced by The World Calendar. The Jewish religious and the Israel civil holidays would continue to be computed by the traditional Jewish calendar just as hitherto, and would thus continue to "wander" across the general calendar. These holidays, which are official rest-days in Israel, include Passover, Pentecost, the New Year, the Day of Atone-

ment, the Feast of Tabernacles, as also Independence Day (a purely secular holiday), Hanukah (half religious, half secular) and several other memorial days of lesser importance.

On the other hand, the budgetary year (starting on the 1st of April), the collective agreements between employers' associations and the trade unions (running from the 1st of January every year), the monthly salaries and rents, the trimestrial telephone accounts, the annual taxes and a host of other relevant dates, as well as a number of official memorial days such as United Nations Day, the anniversary of the United Nations Assembly Resolution on the establishment of the Jewish State, and others—all these are computed by the Gregorian calendar. It would not make the slightest difference if one day they come to be computed by The World Calendar, unless it be a difference for the better.

In addition, as far as Palestine is concerned, the various non-Jewish communities of Israel compute their own holidays by their own respective calendars; these include not only the Moslems, but also a number of Christian denominations not using the Gregorian calendar—such as the Greek Orthodox, the Abyssinians, the Armenians and the Copts. For most of the inhabitants of Israel, however, the main discrepancy between calendars, as felt in everyday life, is that between the Jewish and the Gregorian.

Broadly speaking, then, realities in modern Israel present, under this aspect, some resemblance to those of the Mayas in ancient Mexico and Guatemala. In both cases, time-reckoning runs in two parallel systems: the lunar (with some adjustment to the solar) for religious purposes, and the solar for civil purposes. With the Mayas (and the Aztecs), however, the two systems, together with the recurrence of the weeks, were coordinated through the ingenious system of the 52-year cycle. With the Jews they are not.

Even the weeks are not fixed in the Jewish calendar. The only adjustment made by the Jewish calendar is that of the lunar year to the solar; 19 solar years consisting of 235 complete lunar months. This cycle was first introduced in ancient Babylon, and—in 433 B.C.—imported from there into ancient Greece by the reformer Meton. Incidentally, there seems to be some intrinsic relation between these two figures—19 and 52—both of which frequently occur as year-cycles for coordination purposes with various calendar systems. The first figure (19) stands to the second (52) in almost the same relationship as 100 to the number of days in the astronomical year (365.2422). Broadly speaking, the 52-year cycle was adopted by the inhabitants of the New World, while the 19-year cycle was favored by those of the Old, including, of course, the Jews, whose calendar is based on such a cycle.

Let us now briefly see what this Jewish calendar is. An incised stone plate, some 3,000 years old, excavated in Gezer (halfway between Jerusalem and the Mediterranean coast), testifies by its Hebrew-language enumeration of 12 lunar months —some by groups of two and the others individually—that, for agricultural purposes, the Jewish peasants of that early epoch of Palestine had a clear idea of the calendar. However, in the same way as the ancient Romans, the actual month-to-month and year-to-year promulgation

of the calendar seems to have been the prerogative of the ruling class. This prerogative was exercised on the basis of direct observation of astronomical phenomena.

It was only at a later period, that of the Second Commonwealth (approximately 450 B.C. to A.D. 70) that this direct observation became increasingly supplemented by calculations. The system of calculations became paramount after the destruction of the Second Temple in A.D. 70, but the monthly promulgation of the calendar still remained the prerogative of the then spiritual leadership of Palestine Jewry. It was not until A.D. 358 that Hillel, a President of the Council of the Sages, prompted by the current political decline of Palestine Jewry, disclosed the system to all Jewish communities throughout the world.

This system of calculation was based upon recorded observation covering at least a millennium. It reckons time from the traditionally reputed date of the creation of the world, or rather from the first full moon following the creation. This, according to the traditionalistic Jewish computation, occurred on Monday at 5 hours and 204 parts, equivalent to 5:11:20 o'clock in the year 3761 B.C. Incidentally, under the impact of the modern science which advances that date insofar as earth is concerned by some two billion years, the official exponents of Jewish religious orthodoxy now tentatively advance the view that human perception of time may have somehow changed with the generations.

For all practical intents and purposes, however, the real or supposed meaning of the departure date of the time-reckoning system seems quite immaterial. Thus, for example, Israel has officially adopted for many practical intents and purposes the Gregorian calendar, i.e., the Christian era, just as did other non-Christian countries like Turkey, India, Japan, or militantly secular Russia and China. What matters is that the setting of this initial date as departure for the time-reckoning often conveys some approximate idea of the age of any given civilization. Under this aspect, the Jewish mythical point of departure of 3761 B.C. roughly compares with 4241 B.C. of ancient Egypt, and 3430 of the Mayas, and 2697 of China.

As the Jewish calendar stands today—ever since A.D. 358—it consists of 12 lunar months usually aggregating 354 days, with a rigid parallel and independent week-series of seven days. Each cycle of 19 years of 12 lunar months is 210 days short of 19 solar years. Here, however, the traditionally moon-minded Jews, together with the Babylonians, Chinese, ancient Arabs, the Indians and others, have gone to meet halfway the traditionally sun-minded ancient Egyptions, Incas and their like. The Egyptians, who otherwise used a decimal system, based their division of time upon the duodecimal system—and hence still had 12 months in their solar year. The Incas, while observing the solar years of 365-366 days, nevertheless had also 12 months computed from the moon's rotation. Similarly the Jews (as well as the Chinese, Indians, etc.) while sticking to their lunar months, made a provision for the solar year into which these lunar months became adjusted. Incidentally, this adjustment was abolished in the case of the Moslems by the Prophet Mohammed, with the result that the Moslem year is always shorter than the Christian, and

the Moslem holidays and months always "wander" throughout the seasons.

The Jewish calendar, however, makes the adjustment by adding an extra month seven times in a cycle, i.e., by keeping seven 13-month years out of every 19 years. These are the 3d year of the cycle, the 6th, the 8th, the 11th, the 14th, the 17th and the 19th, the remaining 12 years of the cycle being of 12 months each. The Jewish months are alternately 29 days and 30 days, with one significant exception. Since Passover in fact has to start on the night of the full moon, a certain elasticity has had to be apportioned to two months (the second and the third): either of them may be of 29 or 30 days as the need arises; and they may be both of 29 or else of 30 days. The total number of the days in the Jewish year, then, fluctuates between 353 and 385. Because of the additional month seven times each 19 years, and because of the elasticity of two months every year, the total may be 353, 354, 355, 383, 384 or 385, but nothing else. Thus, the year 5710 (1949-50) had 353 days; 5711 (1950-51) had 384; the current year of 5712 (1 October 1951 to 19 September 1952) has 355 days; and so will the next year of 5713 (1952-53). This rather complicated system of time-reckoning is bound to last, at least for religious purposes, so long as the Jewish religion lasts in its present form. The complication, of course, is not rendered any easier by the fact that for many other purposes Israel has adopted the Gregorian calendar, both calendars running in a parallel but confusedly uncoordinated way.

In the last analysis, this clash of calendars in Israel is a modern echo of the distant far-away clashes between the civilizations of Egypt and Mesopotamia in the dim past of remote antiquity. It has always been the lot of Palestine to be the link, the meeting point and the battle-ground of various civilizations, and hence perhaps the particular role of the Jewish nation in human history.

This role can hardly be confined to the Jewish contributions to the general stock of humanity. It has also often resulted in making things confused and complicated for some, and more often than not for the Jewish nation itself. A typical, though by no means the most tragic, case to the point, is the rather complicated and confused calendar situation in Israel today.

There is, however, another feature which always invariably typified the Jewish race: they never stood in the way of human progress. Neither will they do so this time, in the case of The World Calendar—provided the right approach is made to them, and provided the rest of civilized humanity comes round to the cause of the universal rationalization of its time-reckoning system. Acceptance of The World Calendar may entail some changes: but even the exponents of the Conservative Jewish religious tradition know that Jewish time-reckoning systems have changed in the past and are again changing today in independent Israel.

WORKABLE WORLD UNITY

By Elisabeth Achelis

This article was written as a contribution to the February "Brotherhood Week" which is annually observed in many synagogues and churches, to promote cooperation between Jews and Christians on behalf of a more dynamic religious life for America. In this yearly get-together, the leaders of Catholic, Protestant and Jewish faiths find much common ground on which they can make a united effort to reinforce the religious basis of American citizenship and government. Miss Achelis suggests that calendar revision is a concrete example of a cause which can be enthusiastically supported by all faiths—not only Christians and Jews, but also Moslems, Buddhists and followers of other religions throughout the world.

ON the way to my office every day, I pass a new building at the corner of Fifth Avenue and 65th Street, recently erected by the Union of American Hebrew Congregations. The front of the building, facing the avenue, bears in large bold letters the inspiring words "Love thy neighbor as thyself." The longer wall has another text, "Do justly, love mercy, walk humbly with thy God."

The first of these comes from the Old Testament and achieved new emphasis and meaning at the beginning of the Christian era when Jesus made it the second Great Commandment for all His followers. The other statement is from the prophet Micah, which received many centuries later a beautiful reaffirmation from the greatest poet of the English language: "The quality of mercy is not strained . . . it is an attribute to God himself . . . when mercy seasons justice."

Profoundly arresting are the five words which face the avenue. They have a deep meaning to the multitudes of people who pass by, vividly recalling that we are all neighbors, that all people are like ourselves, that we should regard each other as brothers. Collectively and individually we are children of one and the same Creator. We spring from the same Source, notwithstanding our differences. Brotherhood is man's common heritage and loving-kindness his natural impulse.

What then is happening to man that these fundamental and all-embracing truths are not more widely realized, practiced and lived? I believe it is because we have allowed outward appearances and differences to influence and dominate us, so that these lesser values override in a great measure the basic consciousness of our common origin and heritage. This tends to selfishness and rivalry rather than harmony and understanding. Such an unhappy and unbalanced condition has brought about unreasonable contentions between nations, peoples, races and individuals. They vie with each other in defense of their differences, which are thus emphasized over common agreement and justice.

Now differences are good, and a variety of viewpoints essential to well being.

For instance, we delight in the variables of music, in the varieties of color, in the diverse forms of trees and floral fragrances, in the different songs of birds and many kinds of animals, in the regular recurrence of the four seasons with their contrasting aspects. Variety is a joy in life, yet underneath and fundamental to its manifold expression there ever exists a basic oneness. All aspects spring from a common source—the Creator who made heaven and earth, and fashioned man in His likeness.

In my particular work of advocating revision of the calendar on a more stable, orderly and harmonious basis, there exist differences. There are distinctively different time units in the calendar—the day, the week, the month and the quarters or seasons. In amending the Gregorian calendar, the new plan adjusts these divisions on an equalized basis, whereby the various time units meet and agree at the beginning and closing of each quarter-year. Without forfeiting their individuality, they join together for a harmonious result.

The new time-plan, The World Calendar, is a coordinated system, arranged in a pattern of simple arithmetic. The 12-month year is divided into equal halves and quarters. Each quarter-year has exactly 91 days, 13 weeks, 3 months or one season; the three months have respectively 31, 30, 30 days in rhythmic order, and each month has 26 weekdays, plus Sundays. No one time unit is emphasized over the others. Each has its acknowledged place and function. The familiar arrangement of the week is maintained. Sunday remains the first day of the week for the worship of Christians, Friday the sixth day for Moslems, Saturday the seventh day for Jews.

The World Calendar is a practical and workable system of time measurement, with every year the same. Yet it contains an orderly variety in its subdivisions that prevents the calendar from becoming a dull, routine, mechanized system.

Its 52 weeks, in regular fashion, account for 364 days. So far so good, but the year is not yet complete. A 365th day and occasionally a 366th day must be accounted for, or the calendar would run away from the seasons. What is to be done with these awkward yet indispensable days, one at the end of every year, the other in leap years? For the best workable solution, we need to glance over the precedents established in ancient calendar history.

The old Egyptian system, prototype of our present calendar, was composed of twelve 30-day months, each divided into three "decades"; then at the close of the 360-day year, five feast-days were added to complete a 365-day year. This was the Egyptian method of keeping the calendar in harmony with the seasons.

The Julian calendar was an adaptation of the Egyptian system. It took the closing five days of the Egyptian year-end unit and distributed them through the year (and the new leap-year day was added every four years). But in 321 A.D., an entirely new feature was introduced into the Julian calendar by Constantine the Great. He commanded the observance of a seven-day week and appointed the opening day of the week Sunday as the Christian day of worship. Here was the first distinctively religious feature ushered into the Julian civil and scientific calendar.

The next important amendment of the Julian calendar came when Pope Gregory XIII undertook to improve Caesar's leap-year rule. He brought the calendar back

once more on an even keel with the seasons by cancelling ten days. The 4th of October, a Thursday, was followed by 15 October, a Friday. Although the apparent weekly continuity was not interrupted, the logical rotation of weekdays was broken, and two Fridays, Saturdays and Sundays were irretrievably lost. The year of the reform, 1582, had only 50 instead of the accustomed 52 days of worship.

Another calendar with possible lessons for modern times is found in a remarkable system used by the ancient Hebrews. In the third book of the Old Testament is described one of the earliest recorded efforts to organize a calendar with days for worship. It is the "pentecontad" system of 49 days with seven Sabbaths, that ended with a 50th day, added as a special offering to the Lord. (Leviticus 23: 15, 16.) With the close of the 50th day, a new pentecontad series of 50 days began, and so continued in rotation.

The ancient Hebrews thus introduced an intercalary day into their calendar, long before the Julian intercalation of a leap-year day. Their system was also quite different from the five-day period of feast-days which concluded the year among the Egyptians. It is generally conceded that the pentecontad calendar was used for a long period in the pre-Moses and during the Mosaic eras. The special 50th day was the origin of Jubilee years and "golden anniversaries," which are still joyously observed and celebrated.

The pentecontad calendar had no scientific basis. It stressed a series of seven Sabbaths, wholly religious in usage, supplemented by an extra day, as a special offering to the Lord, at the end of each such cycle. The system was abandoned because of conditions which arose during the Babylonian captivity.

When the Hebrews were conquered by the Babylonians, a grave danger arose that they might be assimilated. Their zealous religious leaders endeavored to counteract this danger by solidifying the Jewish people in a new emphasis on their special religious rites and customs. They concentrated especially on the Sabbath day of worship, and to make it more important they formulated their own tenet of the *unbroken sequence of seven-day weeks.* It was not merely the Sabbath that would unite them, but also the newly formulated theory of an unbroken series of seven-day weeks. To accomplish this end, the special 50th day of worship was sacrificed and abandoned.

We are told that as late as the second century before Christ, contentions and discussions were still going on among Hebraic leaders regarding the discarded day and the pentecontad calendar, notwithstanding the fact that the doctrine of the unbroken continuity of the week had been in effect and usage for several centuries.

Modern revision of the calendar rests once again upon scientific grounds, and is planned along *international* lines. The calendar belongs to all nations and peoples. It is on this premise that The World Calendar installs the 365th day of the year as a world holiday outside the weekday sequence, comparable to the ancient 50th day that completed the earlier pentecontad cycle.

After the 364 days, divisible into equal quarters and ending with Saturday the 30th day of December, the required 365th day is added to complete the solar year,

after which an entirely new cycle of 365 days begins again, in continuous rotation.

The 365th day is called *Worldsday*, a new world holiday that will be observed throughout the world. It is dated either "W December" or "31 December" and dedicated to the brotherhood of man, a day of good will, cooperation and unity. It is a non-working day. Every year begins on a Sunday, the 1st of January.

The equally-required 366th day of leap years is similarly placed at the end of the second quarter, in the middle of the calendar every four years. It follows Saturday, 30 June, and is dated either "W June" or "31 June." It is the *Leapyear Day*, another world holiday and non-working day, uniting mankind in a common bond of friendship. Thus every 1st of July begins on a Sunday.

History has proved to us that objection to The World Calendar on the ground of the one or two extra days, Worldsday and Leapyear Day, is not tenable nor justified. The very opposite is true. There should be real cause for rejoicing that an ancient special day, abolished for national and local reasons, is now being reinstated for international observance, uniting all nations as one.

Let us not become like the ancient "stiffnecked" people, rebelling and resisting, and thus denying a wise reform for the common good of all. Neither should we show ourselves ignorant of the past and lay ourselves open to narrow-mindedness and obstinacy.

Such attitudes are a very denial of the brotherhood and the loving kindness of man and if insisted upon would ever keep him apart from his fellowmen. We should watch and be on our guard that opposition by a few or a minority, emphasizing differences by specializing on one particular time unit to the neglect of all the others, does not deny the rights of the majority. It is not differences but *common agreements* that count. It is the universal acceptance of one day of worship in every week that is of transcendent value and not a later theory of the unbroken continuity of the week.

When one considers that the custom of adding an extra day at the close of a week is derived from the ancient Hebrews, that its revival comes from a Roman Catholic priest (Abbé Marco Mastrofini, who suggested it in 1834), and that its adoption is approved by great Protestant Church bodies of the world, it is clear that from a religious viewpoint, The World Calendar has the elements of unity and fellowship, not only for Christians and Jews, but also for followers of other faiths.

The new Worldsday, the closing day of every year, observed universally by all nations and races, will thus be a shining thread woven into the web and woof of everyday living, enriched and supplemented by the observance every four years of a similar Leapyear holiday. Both these stabilizing world holidays, in their observances, will unite mankind and the words, "Love thy neighbor as thyself" become a living and workable precept.

Agreements not differences are the foundation stones of *this new time-system*, awaiting approval and adoption for the common good of all.

RECENT CALENDAR RESEARCH

Time Systems of India

By VEDAGIRI T. SAMBANDAM
(Abstracted from Indian Express, Madras)

OLDEST of all calendars, at least in conception, is the Hindu religious tabulation which begins not with the founding of a city or the birth of a prophet, but as it should, with the birth of earth itself. The period chosen for beginning the era is a time "when a given order of things was completed by the sun, moon and planets returning to a state of conjunction from which they started." This period, known as the Great Age, is of 4,320,000 solar years; it is divided into Krita, the Golden Age, Treta, the Silver Age, Dvapara, the Bronze Age, and Kali, the Iron Age, in which we live at present.

Another calendar system devised by the ancient wise men of India provides a Kalpa or aeon, made up of 1,008 Great Ages or 4354.56 million solar years. The age of the earth is set at about 3,000 million years; if life can exist on this earth for 1,000 million years more, we shall still be in our first Kalpa. Such a calendar could be devised nowhere except in India; it is actually in use today for certain esoteric religious purposes.

Historians recognize that in the beginnings of the human calendar, the day was the unit of time. The bright days and the dark nights were the plainest time units the ancients could recognize. There were no hours, minutes or seconds. The day was divided into segments, even as now: morning, midday, afternoon, evening and night. The complete day—from noon to noon or from sunrise to sunrise—was a natural unit.

The week, on the other hand, is an arbitrary unit. About 4,000 years ago, India observed eight-day weeks. The days of the week were not named; they were known by letters of the alphabet, and each weekday was dedicated to certain activities. When the seven-day week was adopted by western nations, the names of planets and heavenly bodies were given to the days. Eastern calendars used similar dedication to their gods.

Months originally were meant to denote longer periods than weeks, and related themselves to the moon periods. They were useful in designating occupational divisions of time—as the sowing month, the lambing month, etc.

Many early calendars were disjointed in their method of tallying the year. Even the early Romans had a calendar of 10 months, followed by a gap of two months; this didn't matter with the ancients, as the gap came in winter, when no communal life or agriculture could be planned. Similar disjointed calendars were used in Central Africa and China. The Arabs in pre-Islamic days had an intricate method of intercalation which kept their calendar in tune with the seasons (even to this day some of the Arabic month-names refer to the different seasons), but this was forbidden in the Koran, and the Moslems now use a purely lunar calendar, with a time-slip of about 11 days per solar year, or one year in 33. So if a Mohammedan says he is 34 years old he has seen only 33 summers.

Pope Gregory XIII was perhaps the greatest calendar reformer of all time—not because he made any radical or revolutionary changes, but because he was the first to establish a time system that eventually was accepted by the whole world.

Even though his calendar is now in universal use, it is not free from defects. Those who advocate a revision seek to rectify these

defects and make his calendar a more perfect and convenient measuring system. They want a calendar that will be the same every year, so that the same day of the year will come always on the same weekday. They also seek to have similar segments of the year equal in length.

The main difficulty in constructing a perfect calendar is that we have to make it match up to certain natural events. We would like to have a time system similar to our linear measure, where invariably there are 12 inches to a foot, and three feet to a yard, without any fractions or variables. We created these linear measures arbitrarily and they serve us well. But when it comes to a year, we are bound to the stars and the planets; we have to handle a solar year which works out into an awkward figure of 365 days, plus a complicated fraction. In ancient times fractions didn't matter: they began to trouble mankind only a few centuries ago.

Days Gone By

By Louis Sobol

(Columnist of the New York Journal-American)

IT'S no exaggeration to say that the calendar has been around almost as long as people. The cave men etched a few strokes on the wall to indicate phases of the moon. Babylonians got along by sticking a pole in the ground and reading the shadow; their calculations weren't too correct, but you could always add a month when the time fell back—and the tax collectors loved it.

In the days of the glory that was Rome's, the City Fathers would await the coming of the new moon and then proclaim the birth of a new month from the steps of the capitol. These callings, the Kalendae, were the origin of our word calendar.

This year there's something extra special about the calendar: it is celebrating its 200th birthday in our English-speaking world. Actually the Gregorian reform came in 1582 and most countries promptly okayed the new time deal; but England held out, which means we—who were the colonies—did, too, until 1752. (Russia likewise said nix to the novelty, preferring to remain eleven days behind the sun, and in our time a few thousand years behind civilization).

Not all people go by our Gregorian schedule. In Chinatown they celebrate New Year's long after we've forgotten our January first resolutions. Jewish holidays are reckoned by one of the oldest calendars in continuous existence; with the Jews, New Year arrives in the early Fall. Catholics of the eastern rite still like to observe Christmas and Easter by the Julian calendar, about ten days behind the rest of the world.

The late FDR started to fool around with our calendar by moving Thanksgiving Day around. In ancient Rome the politicians liked a variable February because that was election month. Sometimes their February lasted so long that July's heat came on, and March often arrived in December's freeze. When Julius Caesar took charge, his first move was to fix the calendar.

Errors in his well-meant leap-year computation eventually put the world a week or so out of step, with a growing gap between what the sun said and what people read on the wall. A scholar named Bede called for a recount in 730, but since there was nothing to lose but time, it took another 700 years to get his suggestion adopted.

Our English-speaking world was still tardier in taking heed of the lost week-end. But they managed to lose eleven days between 2 September and 14 September, in 1752, by going to bed and then waking up to find it was twelve days later. That's what really happened in England and the colonies 200 years ago. There were plenty of squawks: tenants squawked about rents, contracts got into a tangle, weddings and anniversaries went awry and the only happy people were women whose birthdays came in those discarded eleven days—they just forgot about that year in their life.

It was Ben Franklin who introduced the new calendar to the colonies: most of the 1752 edition of his Poor Richard's Almanac was devoted to the subject.

CURRENT PRESS COMMENT

Strong Support in U. N.

The New York Times

ADOPTION of a perpetual World Calendar would go hand in hand with the United Nations efforts to create world order, proponents of the scheme insist.

Miss Elisabeth Achelis, president of The World Calendar Association, has campaigned for 20 years for this new time order. It has received strong support in the United Nations, where its backers consider it completely non-political.

Railway Approval

Montreal Gazette

CANADIAN railways are prepared to indicate adoption of a World Calendar would be "acceptable" to them.

The railways see certain disadvantages to grouping all holidays with week-ends, but their objection to that one feature is not considered sufficient to justify rejection of the main plan. Interests other than the railways greatly desire that holidays be so grouped.

Days and Dates

Chicago Tribune

JANUARY first has no more right to start off our year than any other date. It got its place only because of political finagling in ancient Rome. Along about 700 B.C. they tacked January and February onto the end of their 10-month calendar in the hope of bringing it more into line with the seasons and thereby preventing the politicians from continually monkeying with the calendar under the pretense of correcting it.

This worked for a few hundred years, but then the politicos began to get itchy fingers again. One fine day the Roman citizens threw on their togas to stroll out to the baths, and discovered that the current government had switched New Year's from the beginning of March to the beginning of January. Just who inspired this deal is not clear, but it must have stretched somebody's term of office considerably.

By Julius Caesar's time errors and manipulations of the calendar had thrown it 67 days out of kilter. It was mid-winter in September. Caesar therefore hired Sosigenes, an Egyptian scientist, to draw up a new system, which was duly installed in 45 B.C., on the first of January. Some historians say Caesar intended to start it on the winter solstice, but was discouraged.

When the Roman Empire broke up, the Julian calendar threatened to do likewise. Florence reinstated the first of March as New Year's. Pisa moved it to March, too, but of the preceding year. An overnight traveler in those days might have left Venice in 1245, passed through 1244 and 1246, and returned to Venice in 1245.

Befuddling Holidays

Batavia (N. Y.) News

WITH Christmas and New Year's falling on a Tuesday, there was hardly anyone whose time during and following the holidays was not befuddled. In every household, factory, business place and office, there was the same grumbling. Just about everybody was saying that the right arrangement would be for holidays to fall adjacent to the week-ends. At the end of 1952 there will be more or less the same difficulty. All this can be avoided if the new proposed World Calendar is adopted. It will enable all countries to stabilize their holidays and escape the huge economic loss that comes from broken weeks.

EDITORIAL PARAGRAPHS

A good many people at the United Nations headquarters hope that a new calendar—The World Calendar—will be adopted and installed by 1956.—*New York City Amsterdam News.*

One of the world's great authorities on the calendar, Abbé Chauve-Bertrand, has published a monograph on "Reform of the Calendar," fully describing the inefficiencies of the present system and endorsing the plan for revision which has been approved by the Official French Commission on Standardization.—*Courrier Française, Bordeaux.*

England and the United States are just about as poky about giving up the Gregorian calendar as they were about adopting it. Yet everyone knows that our present calendar is unbalanced, irregular and unsettled. —*Memphis (Tenn.) Commercial Appeal.*

Calendar revision has long been the aim of devoted groups of men who believe greater efficiency will result from a simplification of our manner of counting days and months.—*Montreal Star.*

We're coming toward a showdown on the latest spurt of the much-desired calendar improvement.—*Utica (N.Y.) Observer-Dispatch.*

Year after year the question arises, should our present calendar be revised? The aim of revision would be to correct the irregularities which are so obvious and so unnecessary in the present system.—*Echo de Calais, France.*

If there were a Nobel prize for perseverance, The World Calendar Association would win it hands down. A new calendar is very hard to sell to an old world that is set in its ways and inclined to prefer the hard ways. —*Plainfield (N.J.) Courier-News.*

Who opposes calendar reform? Mostly those good people who are attached to the past and who say "Our old calendar has served us well for centuries—why change it?" The answer, of course, is that by the same reasoning, we would not have railroads, automobiles or airplanes; if our forefathers had thought that way, we would still be using a lunar calendar.—*Matin, Nice, France.*

Scientists argue that the present calendar a patched-up hangover from the days of Julius Caesar, is passé, because the months and quarters are all jumbled up, holidays vary, and weekdays and dates never agree from year to year. It would be a simple trick to adopt their new calendar. The idea has plenty of merit.—*Charlotte (N.C.) News.*

In a world which has so much need of reorganizing its methods and systems, of putting order and unity into its design for living, there surely ought to be time and leadership for a long-delayed reform of the calendar.—*Nouvel Alsacien, Strasbourg.*

Leap Year is a springboard for arguments in favor of a new calendar system. Students of history know that man's inability to make himself a good calendar causes many inconveniences. To count time more smoothly we shall have to have calendar revision.—*Santa Barbara (Cal.) News-Press.*

It is time to emphasize again the inconveniences of our present calendar and the advantages of the proposed new system which provides four equal quarters in a stabilized year.—*Vie Française, Paris.*

Holidays which fall in midweek are louse up for everybody. Two such experiences this summer have strengthened our belief that the proposed World Calendar should be adopted.—*Fredonia (N.Y.) Censor.*

There is an active and widespread movement in favor of revising and perfecting our present calendar. A special commission for this purpose has been created by the French government under the presidency of M. Caquot.—*Matin, Nice, France.*

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PHILIPPINES: The World Calendar Association, International, Affiliate, Ramon Caro, Chairman, 116 Padre Faura, Manila.

POLAND: Polish Committee for Calendar Reform. (The Committee is at present without a Chairman due to the death of Mr. Jakiel.)

SPAIN: The World Calendar Association, International, Affiliate, Rev. Father Antonio Romañá, S.J., Honorary President; Ramon Ximenez Gil de Avalle, Chairman, Pelayo 38, Ent.°, Barcelona.

SWITZERLAND: The World Calendar Association, International, Affiliate, Prof. Emile Marchand, Chairman, 2, Genferstrasse, Zurich 2.

TURKEY: The World Calendar Association, International, Affiliate, Dr. I. A. Dereoglu, Chairman, Beyoglu, Istiklal Caddesi 485, Istanbul.

UNITED STATES: The World Calendar Association, Inc., International, Affiliate, Elisabeth Achelis, President, 630 Fifth Avenue, New York 20.

URUGUAY: The World Calendar Association, International, Affiliate, Prof. Alberto Reyes Thévenet, Chairman, Liceo "Hector Miranda," Calle Sierra 2274, Montevideo.

YUGOSLAVIA: Yugoslavian Committee on Calendar Reform. (The Committee is at present without a Chairman due to the death of Mr. George Curcin.)

FROM THE MAIL BAG

M. Jean Dupuy, Secretary-General of the French Association for the United Nations, has expressed his great interest in calendar reform and says there is a considerable following for it in his country.—John A. F. Ennals, Secretary-General, World Federation of United Nations Associations, Geneva, Switzerland.

There are fuddy-duddies who dismiss calendar reform with the casual remark that the present calendar is good enough for them. If that's an argument, then little Bobby, bouncing along on his Shetland pony, has a chance against Hill Prince, with Eddie Arcaro up. Both are riding horses, but there the resemblance ends.—C. B. Fogle, Los Angeles.

It would appear that some of your critics consider an unbroken 7-day week as sacrosanct and must not be disturbed. Could you not quote the practical experience of travellers between, say, Western America and Japan, who, in giving effect to Zone times, divide the week into 6 or 7 or 8 days without suffering any inconvenience? When I made the journey from Yokohama to Vancouver about 40 years ago we had two Fridays in one week. The extra 8th day was called "Antipodes Day" but I now like your "Worldsday" better. May good luck crown your efforts.—Harry Allcock, Industrialist, Hale, Cheshire, England.

History and improvement of the calendar are taught here, even in the elementary schools.—Edgar Schlimpert, St. Louis, Mo.

In Puerto Rico we find that calendar reform is an interesting topic for student discussion.—Josue Castillo-Mercado, Jayuya.

Unless we can convince men and women everywhere of the key importance spiritual values must play in everyday life, there is little chance of our being able to support our own freedom, much less to expand it and spread its benefits to other peoples. The splendid work you are doing with The World Calendar is part of that spiritual, educational and growth process.—Wallace C. Speers, New York City.

Bhola Panth's book, *Consider the Calendar*, is a fine addition to the literature on this subject. It puts in sequence and perspective the information which students ought to have.—Henry Crew, Prof. Physics, Evanston, Ill.

Our many foreign students are most interested in the adoption of The World Calendar.—Escola Americana do Rio de Janeiro.

In this part of India there is a definite new interest in world revision of the calendar.—P. P. Nambiar, Madras.

Adoption of the new calendar has been postponed too long. It will eventually succeed.—C. G. DeTonnancour, Montreal.

It gives me great satisfaction to know about the progress of efforts to reform the antiquated calendar. — Edmundo Franco, Guatemala City.

People I have succeeded in interesting say, "What a magnificent idea!" They agree that the UN must not let this present opportunity pass for bringing such a much-needed reform into being.—Major C. F. J. Galloway, London, England.

Housewives have a new reason to applaud The World Calendar. The Social Security law requires them to make out quarterly reports for domestic employees; these reports and payments would be greatly simplified by a standard three months' period which The World Calendar will provide. We wish quick success for this common sense idea.—Mrs. Isabel Hackett, Bound Brook, N. J.

My attention was first drawn to the merits of calendar revision by an able instructor during my college days, perhaps 15 years ago. My interest has continued, and since I became a college instructor, I have made a point of discussing this important matter with my students as a sensible improvement in our design for living.—L. C. Knight, New Concord, O.

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



After reading please pass on to others.

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Journal of CALENDAR REFORM

SCIENCE TEACHERS' ISSUE

Prof. Graubard, Prof. Jones, Dr. Echols, John J. O'Neill

EDITORIAL
Page 49

July 1952

THE WORLD CALENDAR

1ST QUARTER

JANUARY						
S	M	T	W	T	F	S
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4TH QUARTER

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W

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days, 13 weeks or 3 months; the four quarters are identical in form.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.

ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXII JULY 1952 No. 2

A PROPOSED resolution has been submitted to the nations of the world asking the United Nations General Assembly this autumn: *to request the Economic and Social Council to consider The World Calendar in the spring of 1953 and to submit its recommendations to the eighth session of the General Assembly in the autumn of the same year.* The purpose is to adopt the new calendar on the first day of 1956, the date on which both old and new calendars automatically merge.

Seventeen governments have approved calendar revision in principle. Thus a nucleus has been formed, and these governments will doubtless be ready to cooperate in forthright action to place the subject on the United Nations agenda immediately, thus enabling decisive consideration by ECOSOC next spring. Faith without works is dead.

What stands in the way? There are three dragons which must be overcome—Fear, Do-Nothingism, Apathy. *(See Prof. Avent's article, page 78.)*

Fear is an obsession of our present world. Fear of war, fear of change, fear of taking the lead—these paralyze effective action of world leaders. There is truth in Francis Bacon's potent phrase: "Nothing is terrible, except fear itself." Fear is an emotion of weakness, of incompetence, that can be overthrown only by courage, faith and confidence.

The second dragon is Do-Nothingism, an escape complex. Under its influence, inaction increases and opportunities are lost. It withers leadership and discourages constructive movements.

The third dragon is Apathy, indifference—the shrug of the shoulder, let the other fellow do it, complete inertia. The best way it can be eliminated is by righteous indignation and an alert zeal for the public good.

The world today is too much in the grip of this threefold menace which impedes progress and advancement. It must be subdued and conquered.

Nations need a David with the strength and faith to kill Goliath, a Hercules to perform heroic labors, a St. George to vanquish the dragons.

The capacity for such valiant, noble and constructive deeds is still with us. It needs but to be released by courageous, vigorous action. Approval and acceptance for The World Calendar *now* will create order and harmony within our time-system. All nations and peoples can cooperate in this unifying action whereby a cornerstone will have been laid on which to build better days. They should not allow this precious opportunity to be lost through delay. "Where there is no vision, the people perish."

It has been said that the adoption of the solar calendar in Egypt was the earliest dated intellectual event in human affairs. Historians of the future may well record that the adoption of the new calendar, during bewildering and uncertain days, was a miracle of this age—a progressive intellectual achievement of high import to all mankind.

Americans, awake and act! United Nations, arouse and perform!

MATERIAL FOR SCIENCE TEACHERS

More than a thousand science teachers in American schools and colleges are members of The World Calendar Association. This issue of the JOURNAL, appearing during their summer vacation, contains a variety of material which will be useful to them in preparing a presentation of calendar reform next fall as part of the general background of science studies.

Professor Graubard of the University of Minnesota has long maintained that a knowledge of the calendar is a valuable part of basic information for students of the natural sciences. Professor Avent of the University of Tennessee shows a *Practical Path to Adoption* of a revised calendar. Dr. Echols of the University of Alabama, writing from Dublin, Ireland, discusses amusingly the historical idiosyncracies of the calendar and their effect on modern life and our current pattern of living. John J. O'Neill, eminent Science Editor of the *New York Herald-Tribune*, gives his enthusiastic endorsement to the movement for an improved calendar. Professor Jones of the University of Texas describes a novel experiment in using science as a theme for students of English composition. Professor Neugebaur of Brown writes forcefully on the ancient Egyptian calendar.

Science teachers will also be interested in an article from London about the organization of a new calendar reform group in Great Britain. One of the leaders in this movement is the eminent British scientist, Sir H. Spencer-Jones, the Astronomer Royal. As far back as 1938, he called attention to the scientific interest in an improved system of time measurement. He said: "Astronomers are regarded as having a special responsibility for the calendar. For this reason, perhaps, special attention is given to the opinions of astronomers on all matters that affect the calendar. The measurement of time is, of course, a fundamental concern of the astronomer. I welcome this opportunity of making it clear that astronomers, as far as their scientific work is concerned, can have no objection to calendar reform. They may take even more interest than the average member of the community, because many astronomers feel that they have, historically, a vested interest in all that pertains to the calendar. Many of the foremost astronomers in all countries have expressed themselves in favor of The World Calendar. I am personally in favor of this plan."

Journal of

CALENDAR REFORM

JULY 1952

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GREAT BRITAIN MAKES FRESH START

A NEW British campaign to reform the calendar was launched in Committee Room Four of the House of Lords on 6 May.

The meeting had been called by Lord Merthyr, who presided. He had invited about fifty representatives of leading scientific, business and social organizations. Their two-hour conference was a round-table discussion of plans to arouse renewed interest in Great Britain and to obtain official support for action through the United Nations. The meeting appointed a Committee of Twelve to set up a permanent organization to be known as the British Section of The World Calendar Association.

Lord Merthyr agreed to act as Chairman of the committee. Mr. James Avery Joyce, international lawyer and lecturer, was invited to serve as Honorary Secretary, and Mr. Benjamin Herrington, O.B.E., former superintendent of Customs and Excise at Liverpool, was named as Acting Treasurer.

Letters supporting the movement were received from Harry Allcock of the Society of Mechanical Engineers, Arthur Rodwell of the Civil Engineers, Miss A. Ruth Fry of the Society of Friends, Sir Adrian Boult of the London Philharmonic Orchestra, Commander P. Clissold of the Royal Naval Reserve, Giles Newton of the London Chamber of Commerce, and Professor Lancelot Hogben, F.R.S. Miss Fry wrote: "As I believe international tension is reduced by nations acting together for positive improvements, I hope this one will be advocated in many countries, and that Britain will not be slow in taking its share." Dr. C. D. Gill of Reigate wrote: "It looks to me as if the time is ripe, and I hope your meeting will mark the opening of a new chapter in calendar reform."

One of the enthusiastic advocates of calendar reform at the preliminary meeting was I. J. Pitman, Conservative Member of Parliament and prominent business leader. Another was Dr. L. E. C. Hughes, well-known scientist. The Astronomer Royal, Sir Harold Spencer-Jones, was unable to be present at the organizational meeting, but indicated that he fully supported the purposes of the proposed organization and he has since agreed to speak for calendar reform at a public assembly to be held later, in the auditorium of the Royal Society of Arts.

This assembly has since been set for 17 October, as the beginning of a systematic campaign over the winter months. The address by the Astronomer Royal will be supported on the platform by other distinguished men and women. On another date, it is expected that Lord Merthyr will deliver a paper on the business and popular aspects of calendar reform before the regular monthly meeting of the Royal Society of Arts, and the text of his address will be circulated to 5,000 members and supporters.

The Honorary Secretary of the new British organization will visit the United States and Canada during the summer, and will confer with advocates of calendar reform in both countries regarding a unified campaign in all English-speaking countries.

UNFINISHED QUEST for PERFECTION

By Mark Graubard
Professor of the History of Science, University of Minnesota

IN teaching American history, we try to impress on our students that the Declaration of Independence guarantees the people of the United States their right to the *pursuit* of happiness rather than the substance of happiness itself.

There is an interesting analogy here between American history and the history of the calendar. An effective and satisfactory system of measuring worldly time has never yet been a reality with civilized man. His only experience so far has been with the *pursuit* of such a system, and unhappily that unfinished search is still with us today: the calendar of our contemporary society is still far from satisfactory.

It is possible to assert, however, that mankind has at last come within sight of an epochal achievement—a plan that approaches perfection as well as can be done at the present stage of knowledge, a calendar which will eliminate most of the weaknesses and inefficiencies of our current system.

The search for a better calendar has been a permanent feature of all past civilizations. The task has attracted the best minds of every era. There has never been a time when the solons and savants were not aware of the weaknesses of the calendar they were using, nor a time in which numerous efforts were not made to devise improvements. Some of the proposed revisions were as weak and inept as what they sought to remedy; others were distinct advances.

The present movement for an improved calendar, then, is fully in line with the past history of the unending search for calendar betterment. The advantages of The World Calendar are obvious. There are no serious arguments against it. Yet it has encountered some of the same lethargy and inertia which has frequently blocked or postponed calendar reform in the past. The Julian reform came only after two centuries of agitation; the Gregorian reform was a change which had been pointed out as desirable by Roger Bacon in the thirteenth century, more than 300 years before.

A still more ancient example of this inertia is the failure of Ptolemy III to reform the Egyptian calendar in 238

In his latest book, just published, Prof. Graubard discusses the Fundamentals of the Life Sciences. This adds a fourth volume to the versatile trilogy of his previous books—*Man the Slave and Master*, 1938; *Man's Food, its Rhyme and Reason*, 1942; and *Science, Humanity and Politics Face the Atom*, 1947. Prof. Graubard was born in Poland in 1904, and came to America when 16, to achieve academic distinctions which culminated in a Doctorate from Columbia University in 1930. His later career included a remarkable series of fellowships and professorships at home and abroad, including assignments to Clark University, the University of Chicago, the Rockefeller Institute and the U. S. Department of Agriculture. He has done notable research work in hormones and pigments, and served as an observer and consultant for the U. S. Senate's committee on Atomic Energy. He has occupied a chair at the University of Minnesota since 1947, where he has lectured frequently to science groups on calendar reform.

B.C.: his famous decree of Canopus, ordering the observance of leap year, was ignored by priests and people, and did not become effective until Caesar borrowed it and made it part of the new Roman calendar in 45 B.C.

It is a profound historical fact that the masses of people do not take kindly to new ideas, and a long period of education is as essential to the process of calendar change as is oxygen to life. Resistance to improvement is a normal expression of force of habit; the inertia of popular acceptance is a natural law which must be taken into account. According to the ordinary rate of social change in olden times, two or three centuries were then required to make a shift in calendar habit; we may hope that there is a faster tempo in the world today. Of course, the current crusade for The World Calendar climaxes more than a century of agitation, starting with Mastrofini about 1834; perhaps in this sense it is really ripe for realization today, 118 years later.

Let us take a quick glimpse at some of the vicissitudes with which fate beset the calendar ever since the human mind conceived it and society began to put it to practical uses. The oldest calendar known is that of Egypt, and strangely enough it was a solar calendar as is ours, hence based upon the revolution of the earth about the sun. The ancient Egyptians kept close watch on the inundations of the Nile which irrigated the narrow fertile strip along its banks. Records of that annual event have been kept for over 5,500 years. The beginning of the year was marked by the day of the heliacal rising of Sirius, the dog-star, which Egyptians called Sothis. Hence it was the day on which that star, after being unseen in the sky for about two months, was first rendered visible at dawn by the sun's apparent easterly motion against the stars. This Egyptian calendar was a brilliant and valuable conception, but no sooner was it conceived than its shortcomings became apparent.

The year, having been made only 365 days long, fell short of a true solar year by about a quarter of a day, so that the New Year receded in time, and the day of the heliacal rising of Sothis came later and later after the New Year, by about a quarter of a day annually, or a day every four years. Hence 1,460 Sothic or solar years were counted by the Egyptians as 1,461 years. Their wandering calendar limped along for 5,000 years, with priests and people successfully opposing every effort at correction or improvement.

This resistance, which is a natural expression of the force of habit and institutional inertia, endured until the reform of Julius Caesar. The Julian reform was an amazing achievement because it not only solved (in part, of course, since the calendar problem is still not fully solved to this day) the Egyptian dilemma, but cleared up to an enormous extent the Roman calendar mess of 700 years' duration.

The old Roman calendar, like most timetables of the world, was a lunar one, and consisted originally of ten lunar months from March to December. Numa Pompilius (715-672 B.C.) was the first Roman ruler to begin the everlasting pursuit of calendar reform which in the perspective of history must appear as an unending indoor sport of all peoples and cultures. It was Numa who introduced 12 lunar months, by adding January and February to the list. It was he also who

initiated in Rome the universal trick of ancient and some modern calendar makers known as intercalation, or the art of inserting a few days here and there, or even an extra month, so as to harmonize the lunar months with the motions of the sun, and thus tie an essentially lunar calendar to the seasons. In 452 B.C., the Roman Supreme Court of ten judges, hence known as the Decemvirs, placed the months in the order they are known to us today. Some time thereafter the College of Pontiffs began intercalating a thirteenth month of 22 or 23 days called Mercedonius whenever needed. This system soon evolved into a regular political graft, through the control of the annual calendar adjustment. The evil grew so big that the calendar became a controversial political football. Yet, with all its clumsiness and social evils, the Roman calendar persisted until Caesar's time.

His reform measure gave the calendar the general design it still has today. The year the change to the new scheme was introduced was 46 B.C. which was made the last of the old reckoning. In order to start with a clean slate that last year was made to contain 445 days. Henceforth the calendar was made permanent, and haphazard intercalary months were abolished. With the usual opposition to change, the people called it the Year of Confusion rather than the year of good riddance to a bad institution.

But the perfect calendar was still far in the offing. Caesar wanted to start the new year on 25 December, which was the day of an ancient time-honored pagan holiday, the Saturnalia, and of the winter solstice. But people resisted that choice because a new moon was due then on 1 January and Caesar had to go along with them in their desire to start the new reckoning according to a traditional lunar landmark.

No sooner was the new calendar put into effect than trouble developed as a result of the Roman custom of counting the last number of a finished sequence as the first of a succeeding one. Hence there quickly accumulated a surplus of leap years, which Augustus Caesar had to correct. Calendar perfection continued to elude the everlasting searchers who were the sages and scholars of every age and culture.

Although science and all quests empirical and material fell into disrepute with the coming of Christianity—because the world was enthralled with its message of hope, mercy, brotherhood, faith, virtue and immortality—some astronomy was saved from the general apathy because of the need for authentic observations to help in the determination of religious holidays. The Julian calendar counted the year as 365.25 days, while in reality it happens to be 365.2422 days long. Since the actual year was shorter than the calendar year, the date set for Easter kept slipping backward to the extent of one day every 128 years. In 1,780 years the error was 10 days, and churchmen perceived that eventually Easter would collide with Christmas.

Already in the thirteenth century Roger Bacon called attention to the error, and the need for calendar reform was in the air. It was discussed with regularity year in and year out, but the usual reluctance prevented action. Even Copernicus was asked by the Bishop of Fossombrone to give his opinions on the then urgent question of calendar reform. This was in 1514 and Copernicus, then only 29 years of

age and apparently already famous, declined in his usual shy and cautious manner, on the grounds that "he did not think the motions of the sun and moon had yet been sufficiently investigated to allow of a final settlement of the question."

There were endless discussions and committees, until at last, under the guidance of Pope Gregory XIII, the new calendar was introduced in Catholic countries in 1582. Out of sheer opposition to any novel ideas offered by the Catholic hierarchy, Protestant countries resisted the change for various lengths of time. In 1752 Great Britain and her colonies finally adopted the Gregorian reform. New Year's Day which until then was on 25 March was shifted to 1 January, and incidentally George Washington's birthday was shifted from 11 February 1731 to 22 February 1732, because eleven days had to be dropped from the flow of time, an event which elicited vociferous protests from many demonstrators in London, as if missing those eleven days had robbed them and the world of great wealth, pleasure and opportunity. But such is the nature of progress and such is the inevitable opposition of the common run of the wise and the ignorant to any change.

The Gregorian reform was important and helpful. But the fact of the matter was that the quest for a better calendar was not yet terminated, or the need for it dissipated. The principle of the solar calendar has not been challenged in 20 centuries, except by Mohammed, but refinements in its application are still required. Moreover, in spite of the soporific inertia of habit and social lethargy, such refinements will in time be accepted, if the lessons of the past have any meaning at all.

Before commenting on our present situation let us look at some of the other calendars and see whether their fate was any different. Needless to say it should not surprise us to discover it was not. The Jewish calendar was originally or rather basically lunar, and it reached its present state only after many reforms and revisions.

The Mohammedan calendar was originally luni-solar, but Mohammed prohibited any intercalation and made it pure lunar. Hence it is a peregrinating or wandering calendar, with the Ramadan or month of fasting occurring in rotation at all seasons of the year. Under it, 34 lunar years approximate 33 solar years. That a calendar based solely on lunar revolutions is difficult goes without saying, although many millions of people still endure it. But then primitive man went on for thousands of years without any calendar at all, just as he also managed without an alphabet or sometimes without even a religion.

The complexity of the Mayan calendar indicates that its origins were highly experimental, and the quest for their improvement was as intense and as continuous as in the other hemisphere.

The calendar of ancient Greece was luni-solar, and that brilliant nation set out on a fool's errand to work out a cycle which would exactly harmonize a number of solar years with a whole number of lunations. Because they originally employed the Olympiad as a four-year cycle, the notion of cycles stuck in the tradition. There were cycles of 19 solar years equivalent to 235 lunations, of 160 solar years with 1,979 lunations, of 76 years

and 940 lunations, of 304 years with 3,760 lunations. And so the quest went on, leading nowhere because the goal of "condominion," or whole number agreement between solar years and lunar revolutions, is not only difficult but useless.

Chinese calendar reform began in 2357 B.C. with a luni-solar calendar which required the usual complicated intercalations. The search for a better system became even more chronic and disturbing than in the West. When the Jesuit missionaries were asked to help with the task they tactfully concluded that "the heavens failed to agree with the Chinese calendar." In 1911 China finally adopted the Gregorian calendar.

We must not, however, get the impression that anywhere in the world, with the coming of the Gregorian reform, the search for a better or perfect calendar came to an abrupt halt. We are all acquainted with The World Calendar and its vast advantages over the Gregorian.

NEWS BULLETINS

PANAMA.—Under the title *Un Calendario Perpetuo Para El Mundo,* an 84-page monograph has just been published by *Editora Panama America.* Its author is Juan Rivera Reyes, president of the Panama Association for the Reform of the Calendar, and his handsomely printed book gives an account of the activities of the Republic of Panama on behalf of calendar reform. The text is in Spanish. Copies may be obtained by request to the author, or from members of his Association's executive committee: Ricardo J. Alfaro, former President of Panama; Mario de Diego, former Minister of Foreign Affairs; Octavio Mendez Pereira, Rector of the University of Panama; Benito Reyes Testa, former Chief Justice of the Supreme Court; Publio A. Vasquez, Justice of the Supreme Court; Jeptha B. Duncan, Permanent Delegate to the UN; Rafael E. Moscote, Rector of the National Institute.

TORONTO.—One of the inconveniences of the present calendar is the occurrence of holidays on unsuitable days of the week, a fact which has led the Federal Minister of Labor to authorize an investigation by his statistical department into the extent of this disturbance to business. A. J. Hills of Ottawa, chairman of the Canadian Affiliate of The World Calendar Association, has prepared a table showing when Canada's chief holidays will fall during the next thirty years if the present calendar is retained, and also the improvement in this situation under the stabilized World Calendar. The new calendar would contain no mid-week Canadian holidays. There would never again be an isolated holiday or a week split by a holiday.

THE HAGUE.—George A. E. Gleichman, chairman of The World Calendar Association's affiliated organization in Holland, died suddenly at his home in Wassenaar on 18 June, in his 55th year. Mr. Gleichman was the head of the Amerikaansche Smeerolie Maatschappij (American Lubricating Oil Co.), distributors for the Tide Water Associated Oil Company of New York, with which he had been connected for twenty years. His interest in calendar reform was of long standing; his chairmanship of the Dutch committee dates from 1949.

HONORS FOR CAQUOT, ISO PRESIDENT

By Essy Key Rasmussen
Assistant Director of The World Calendar Association, International

NEW YORK CITY was the cordial host in June to the triennial convention of the International Organization for Standardization (ISO). Delegates from 30 countries participated in sessions which lasted nearly three weeks, under the able presidency of M. Albert Caquot. Many honors came to M. Caquot during his American visit, including an honorary degree (Doctor of Science) from the Brooklyn Polytechnic Institute.

Because M. Caquot is France's leading advocate of calendar revision and president of the calendar reform committee of AFNOR (Association Française de Normalisation), he was the guest of honor on 12 June at a luncheon given by The World Calendar Association in the Tapestry Room of the Park Lane Hotel. Nearly 175 delegates and distinguished guests were present, including representatives of engineering societies and colleges, and members of The World Calendar Association.

During the luncheon M. Caquot received a gift of $1,000, to be used by his AFNOR committee for the promotion of calendar reform in France. Speakers included, besides M. Caquot, Miss Elisabeth Achelis, president of The World Calendar Association, and Dr. John Hedeman of Baltimore, a well-known lecturer who has frequently and eloquently discussed calendar reform from public platforms.

Miss Achelis' remarks were in part as follows: "As president of The World Calendar Association, I am happy to welcome you to this luncheon in honor of a great engineer and an international leader in the cause of standardization.

"When I think of M. Caquot, I am reminded of my first glimpse of the beautiful harbor of Rio de Janeiro, with the monumental figure of Christ standing high on the mountain overlooking the bay. It is one of his many notable engineering works. Whether seen from afar or near, that noble statue fills one with admiration and reverence. It is an inspiration, enhanced by the surrounding grandeur of nature.

"My admiration for M. Caquot is not only for his engineering ability and triumphs, but also for his important work on behalf of standardization. In this field he has been a zealous crusader for more than 25 years.

"His visit to the United States at this time, with the fine gathering of international leaders supporting him at the meetings of ISO, will give valuable impetus to the activities of the American Standards Association. This impetus is needed. The ASA is doing an admirable work, but it should have much wider support if it is to expand its activities to match the magnificent accomplishments of its sister organizations in Europe. I believe that the meetings this month of ISO are going to be a great help

to Admiral Hussey in enlarging American interest in this field. We must all work together for ever-increasing progress.

"As head of The World Calendar Association, I have been engaged in a standardization crusade for more than 20 years. May I take this opportunity to say a few words about the standardization of the calendar? While your various national organizations are standardizing weights, measures and other systems, why should you neglect this great basic matter of time-measurement? Our present calendar is an extremely inconvenient and unsatisfactory yardstick, with its variable lengths of months, quarters and half-years, and its eccentric wandering weekdays and month-dates which make statistical comparisons inaccurate and render planning difficult.

"The French Standardization Organization, known as AFNOR, is the only one of your constituent units that has recognized this calendar situation, and has energetically moved to do something about it. AFNOR has a large and distinguished committee on calendar reform, under the chairmanship of M. Caquot. His leadership



Upper Row: *M. Caquot, Dr. Törnebohm, Admiral Hussey.* Lower Row: *M. Pallez and M. Birlé of AFNOR; Mr. St. Leger, Secretary General of ISO.*

is in itself a guarantee that the committee will continue to be active and progressive. M. Caquot is today the leading advocate of calendar reform in Europe.

"I hope you will agree with me—and with AFNOR—that the calendar should have a place in all national standardization organizations. I appeal to you to follow the example of France and make calendar revision an integral part of your program. Here is an activity that can almost immediately have beneficial effects on all branches of human effort, for an improved calendar is an economic necessity in our modern, stream-lined world. It unites us in a common cause for the good of all.

"Most of you are familiar with the aims and purposes of The World Calendar Association. But for any who are not fully informed, and for a few who would like a bit of a refresher, we have asked one of our members, Dr. John Hedeman of Baltimore, to give you a brief talk on the subject. . . ."

Dr. Hedeman first reviewed briefly the history of the present calendar from the Egyptian kings to Pope Gregory XIII. He then pointed out the serious defects which still mar the calendar as an instrument of time measurement—the shifting pattern of weekdays, the unequal length of quarters and half-years, the eccentric length of months.

The World Calendar, said Dr. Hedeman, will replace disorder and irregularity with order and symmetry. A perpetual calendar will benefit not only statisticians and business men, but also educators, scientists, churches, governments and individuals in every walk of life. The observance of Worldsday will form a link between the nations, promoting peace and mutual understanding.

Miss Achelis thanked Dr. Hedeman for his interesting address. She then turned to the guest of honor and continued:

"M. Caquot, I have already referred to you as an earnest and sincere supporter of calendar reform and an energetic advocate of The World Calendar. This Association is desirous to see that your AFNOR Committee shall not be handicapped in its educational and promotional activities. For this reason, we are placing at your disposal the amount of $1,000, to help finance such activities. It is with very great pleasure that I take this occasion to hand you this gift, in deep appreciation of the valuable preparatory work already done by your committee. At the same time, we wish you Godspeed in this and all your other excellent undertakings."

M. Caquot's reply was in part: "I am indeed happy that the ISO convention has given me an opportunity to participate in this delightful occasion. I am deeply grateful for Miss Achelis' generous words and gift.

"You will pardon me if I hasten to make one slight correction to her remarks. She spoke of her pleasure in viewing the statue of Christ at Rio, and I fear that she gave me too much credit for that noble work. I am not a sculptor: the statue is the work of the eminent French artist Langouski. I was only responsible for the engineering work which insured the stability of the statue and protected it against any possible damage from tempests and earthquakes.

"By the same token, I do not want too much credit given to me for the labors

of the AFNOR committee on calendar reform. The credit should go mostly to M. Birlé and to General Salmon, who are seated with me today. Both of them have been very active and enthusiastic, M. Birlé as secretary of the committee and General Salmon as the official representative of the French armed forces.

"It is from the economic viewpoint that AFNOR has been interested in revision of the calendar. The program of The World Calendar Association is a work of harmony and stability. It proposes to substitute order for disorder. Introduction of the new calendar means that our daily life will be simplified, bookkeeping in all its ramifications will become easier, and statistics will be more accurate. I thank Miss Achelis and her organization in the name of the ISO and in the name of the AFNOR Committee on Calendar Reform."

Among the guests at the head table were Admiral G. F. Hussey, Jr., head of the American Standards Association, and Dr. Hilding Törnebohm, president-elect of ISO. Dr. Törnebohm, who is vice-president and managing director of SKF, the great Swedish ball-bearing concern, will take M. Caquot's place at the expiration of the latter's term of office on 1 January 1953.

Discours de Mlle. Achelis: J'admire M. Caquot non seulement pour sa science d'ingénieur et ses succès professionnels mais également à cause de son activité dans le domaine de la normalisation, où il est un précurseur enthousiaste depuis plus d'un quart de siècle.

Sa visite actuelle aux Etats Unis à l'occasion de l'Assemblée de l'ISO, où il est entoure d'experts éminents du monde entier, donnera, j'en suis sûre, un nouvel élan aux travaux de l'American Standards Association. Un tel renouveau d'élan est nécessaire chez nous. L'American Standards Association fait une oeuvre excellente mais elle trouverait plus d'appui général si elle élargissait ses activités pour que celles-ci atteignent la même envergure que celles des organisations soeurs en Europe. Je suis convaincue que les réunions de l'ISO qui se tiennent à New York actuellement aideront fortement l'Amiral Hussey, dans ses efforts pour intéresser ses compatriotes davantage aux travaux de l'American Standards Association.

Comme présidente de l'Association pour le Calendrier Mondial je poursuis une oeuvre de normalisation depuis plus de 20 ans. Puis-je profiter de cette occasion pour dire quelques mots sur la normalisation du calendrier? Etant donné que les diverses associations que vous représentez normalisent les poids, emsures et autres normes, pourquoi omettriez-vous alors le système par lequel nous mesurons notre temps? Notre calendrier actuel est un étalon très défectueux avec ses mois, trimestres et semestres de longueurs variables, où les jours de la semaine et les dates chevauchent de manière excentrique et rendent toute comparaison statistique inexacte et compliquée.

L'Association Française de Normalisation, ou AFNOR, est la seule parmi les organisations membres de l'ISO qui a reconnu que la réforme du calendrier appartient aux mesures de normalisation. AFNOR a établi une grande Commission représentative pour la Réforme du Calendrier sous la présidence de M. Caquot.

Sa présidence constitue une garantie suffisante du succès des travaux de la Commission. M. Caquot est actuellement le principal avocat de la réforme du calendrier en Europe.

J'espère que vous allez tous être d'accord avec moi—et avec AFNOR—pour considérer que le calendrier doit être inclus parmi les questions à l'ordre du jour de toutes les associations nationales de normalisation. Je fais appel à chacun de vous pour que vous suiviez l'exemple de la France et compreniez la revision du calendrier parmi les questions à l'ordre du jour de votre association nationale.

Voilà un effort qui pourrait aboutir à des resultats qui auraient des effets bienfaisants dans presque tous les domaines de l'activité humaine, car un calendrier perfectionné est une necessité économique dans notre monde actuel.

Le calendrier que je vous propose ne nécessite qu'un changement simple qui est demandé depuis longtemps par de multiples organisations internationales. Tout ce qu'il faut pour le faire accepter est peut-être qu'il soit lancé par des groupements importants de gens pratiques, comme ceux qui sont réunis sous le drapeau de l'ISO.

THIRTY DAYS HATH TACITUS

By Edward C. Echols

YOU are looking over the front page of your newspaper. "My!" you say. "This has really been a cold Exsuperatorius! I'll be glad when spring gets here!"

"Now don't complain," your wife says. "Just remember how hot it was last Commodus and how glad you were to see Antoninus come!"

"That's right," you agree, thinking back, "but I tell you by the time Felix has gone out like a lamb, I'll be more than ready for Nero."

"And Nero showers bring Lucius flowers!" your wife says. "Then it's Germanicus, the month of brides!"

"Daddy!" your youngest interrupts. "Will you listen and see if I have it right *this* time?"

So you turn down the radio, on which Bing is singing that old favorite of the season: "It's Aelius in Amazonius, because I'm in love!" and she recites:

Thirty days hath Tacitus,
Nero, Germanicus, and Romanus.
All the rest have thirty-one,
Save Invictus. . . .

Now if this domestic exchange sounds suspiciously like a code disguising the months of the year, it's because some egotistic Roman emperors did everything they could to get their names inserted into the calendar. Amazonius, Invictus, Felix, and all the rest, were, at one time or another, official months in the Roman calendar, and with a little better luck, might still be in the calendar today, to the absolute ruin of poets and song writers. If you don't believe it, try "Will you love me in Exsuperatorius as you did in Claudius?" on your piano!

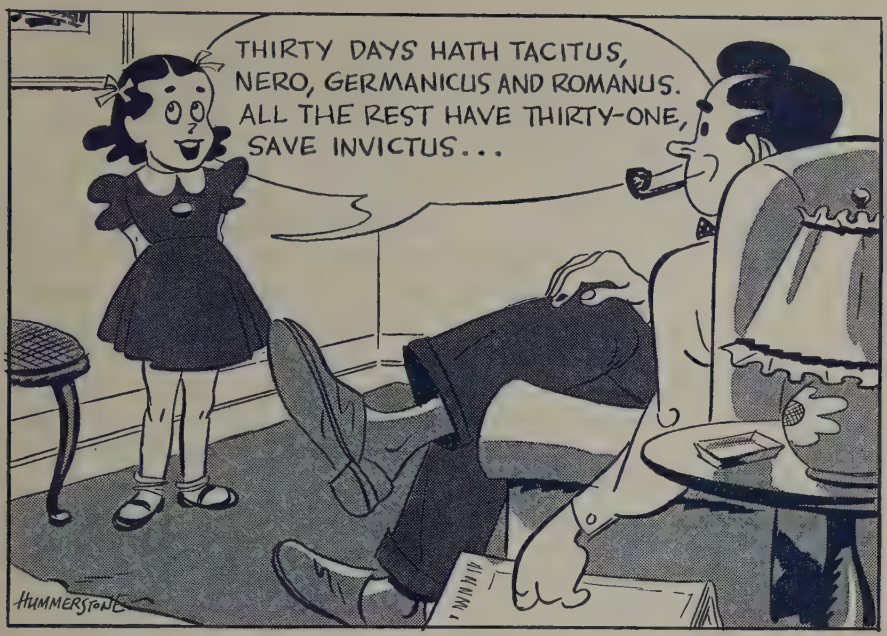
When Numa, Rome's second king, put together the ancestor of our present calendar 2,700 years ago, he gave the months their names, starting with March, the month of the war god, so called because it offered the first good weather for fighting purposes. April, May and June were the months of "budding," "growing" and "ripening," but then Numa's inventiveness failed him, and he simply assigned numbers to the other six months, from Quintilis to December.

January, the month of Janus, the two-faced god of gateways, and February, the month of the infernal gods, were the last two months, and moved up later to the first of the year.

Numa based his calendar on the 354-day lunar year, but since the seasons are geared to the 365-day solar year, it wasn't long before months and seasons were hardly within shouting distance. To make up for this discrepancy the Romans in-

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Mr. Echols is a Virginian, now at Trinity College in Dublin, where he is qualifying for his Ph.D. in Classical Archeology. He is on leave of absence from the University of Alabama, which records him as a member of the faculty of its Department of Classical Languages. He has written more than 35 articles, most of which have been published in learned journals. This article originally appeared, in slightly abridged form, in the *New York Herald-Tribune's* Sunday Magazine, *This Week.*



vented a new month of 22 days, to be inserted every other year. They called this month Mercedonius.

The College of Pontiffs in Rome, to whom Mercedonius was intrusted for proper insertion, quickly discovered they had a little gold mine on their hands. Certain vested—pardon, toga-ed—interests proved more than willing to make substantial contributions to the College's endowment fund, so they could be assured that the year would be: (1) shorter, if they were creditors or (2) longer, if they were debtors.

All these profitable years of playing fast and loose with Mercedonius finally got the calendar into a hopeless muddle. By the time Julius Caesar got through making himself dictator and had time to take a close look at the calendar, March had crept up to midsummer and September was in the winter.

When his astronomers and mathematicians told him that the only permanent solution would be to junk Numa's old lunar system, Julius promptly added the calendar to his list of conquests. To give the seasons a chance to catch up with the months, he stopped the calendar like a clock. Ever after that, the year 46 B.C. was known in Roman circles as the "year of confusion," with good reason—it ended up 445 days long!

Up to that time, the months were just as Numa had left them, but Julius, proud of his efforts on the calendar's behalf, decided to put his signature to a job well done. So he changed the name of his birth month, Quintilis, to Julius — our July.

Augustus, who came to power after Julius' misfortune on the Ides of March, was also voted a month for his part in founding the Roman Empire. The general feeling was that he should choose his birth month, September, but Augustus

had his heart set on Sextilis, the month after Julius. To get it, he made up a list of all the nice things that had happened to him in Sextilis and gave it to the Senate. That august body took the hint. Then Augustus added a day to his month so it would be as long as July.

When the next emperor was asked by the Senate whether he wouldn't like to have November changed to Tiberius, he politely declined with the observation: "Since there are only 12 months, what will you do if there happen to be 13 emperors?"

Those rulers who followed Tiberius were not so concerned about the future. Claudius appropriated May, June was called Germanicus for a short time and the Senate, out of gratitude for Nero's escape from assassins, changed the name of April just before the music-loving emperor burned Rome up.

September was a popular month among the calendar-minded emperors; it was known at various times as Germanicus, Antoninus, and Tacitus. And if certain other emperors had had their way, we would now be celebrating Thanksgiving in Domitianus or Faustinus.

But all of these rather considerable efforts seem feeble when compared to Commodus' all-out assault upon the names of the months. When one of his court poets called his attention to the fact that ten months lacked the dignity of imperial names, Commodus made a clean sweep and renamed all 12 from an imposing list of his own names and titles. He wanted the calendar to read: Amazonius, Invictus, Felix, Pius, Lucius, Aelius, Aurelius, Commodus, Augustus, Herculeus, Romanus, Exsuperatorius!

But arrogant as the emperors were in the matter of changing the months, it was left for an obscure tax collector in Gaul to introduce two *extra* months.

The Romans collected the annual tax levy in 12 monthly payments. When Licinus was sent to Gaul to collect taxes, he quickly discovered that his charges were just about as gullible as they were prosperous, and this happy combination encouraged him to try to increase his tax take. December showed him the way.

When January and February were moved up to the front of the calendar, December became the twelfth month, although *decem* actually means 10. This was enough for Licinus. He issued a directive to his tax payers, informing them: (1) that there were 12 months in the year; (2) that any fool could plainly see that December was only the tenth month; (3) that he would expect the usual payments for Undecember and Duodecember!

New names, new numbers—shorn of all such innovations almost as soon as they were introduced, the calendar today reveals not a single trace of all these post-Augustan efforts to change it. Indeed, names are as Roman today as they were in Rome 2,000 years ago.

Julius Caesar's moderately accurate work on the calendar was adopted by the early Christian church. But he had supposed the year was 11 minutes and 14 seconds longer than it really was. By the 16th century, this error had added up 10 days.

Pope Gregory XIII thereupon issued a brief in 1582, abolishing the Julian calendar, and directing that the 5th of October in that year be called the 15th. To get rid of Caesar's error, the Pope made a slight correction in the leap year rule.

There have been numerous efforts to

remold the calendar in a more symmetrical pattern—with the year split into even quarters and the days of the week falling on the same dates every year.

The present calendar is 2,000 years old, and has almost the same pattern as in Caesar's time. It is still, in fact, all Roman but the numerals.

This is a strange phenomenon in a world which has continually revised all other phases of its design for living. As far back as the time of Columbus, wise men noted that the calendar was the only standard-of-measure which changed from year to year. They asked pointedly: Is it beyond man's ingenuity to devise a perpetual, stable, fixed calendar? No answer to this question came until Abbé Mastrofini made his epochal suggestion in 1834, now embodied in The World Calendar proposals.

The Julian and Gregorian reforms, important as they were for over-all accuracy, did not affect the internal efficiency of the calendar. One inefficient feature, however, was soon abandoned: the clumsy and highly complicated way in which the Romans marked the days of the month. Each month had three "days of reckoning": the Kalends, the Nones, and the Ides. The first day of each month was known as the Kalends. In this connection, it is interesting to note that the Romans had an ancient parallel for the modern ironic: "I'll pay you back the second Tuesday of next week!" The Roman put it this way: "I'll pay you back on the Greek Kalends!" The catch was, of course, that the Greek calendar had no Kalends. The Nones and the Ides were not as regular as the Kalends. They fell, respectively, on the 7th and the 15th of March, May, July, and October; in the other months, they were the 5th and 13th days of the month. A specific day, then, was reckoned as so many days before the Kalends of May, for example. This confusing method was replaced by the simple method of Arabic numbers in use today.

It is much to be regretted that, at the time when the Roman Kalends were abandoned, the question of the regularity of the length of months and of quarters was not examined and scientifically resolved. The advantages of a calendar with stable days of the week and of the month, divided into equal quarters, seem so immediately obvious that one can only ask: "Why hasn't it been revised long ago?"

The real answer to that question lies very probably in an all-too-human reluctance to upset tradition, even when it is demonstrably to the common advantage. Even though this problem of calendar reform seems, at first glance, to be more a public than a private concern, yet there is hardly a single individual whose life is not influenced—and inconvenienced—by the vagaries of the shifting days. Business men, educators, churchmen, scientists, farmers, the man-in-the-street, in short, all who have considered the matter seriously, recognize the benefits of a stable calendar in their various fields. And since we are all affected and will all benefit, it is no more than common sense to support the solution to a glaring example of inefficiency in a world which is placing more and more emphasis upon efficiency: I refer, of course, to The World Calendar, proposed for international adoption by The World Calendar Association.

Make no mistake—the Romans would have seized it eagerly and made it standard throughout the ancient world. Cannot UN do the same for the modern world?

LOOKING TOWARD THE FUTURE

By Kingsland Camp

An Address at the Annual Meeting of the Duodecimal Society

WE who live on this planet are obliged to regulate our lives by two principal units of time, the first of which is the interval from each midnight to the next, called the day. Since the day is caused by the earth's rotation, it is inextricably involved with longitude, or the fraction of the earth's circumference measured from some assigned initial meridian: most logically the meridian of the international date line.

It is unfortunate that the obvious idea of measuring longitude in one direction only, and preferably by fractions of a circumference that correspond to the divisions of a day, was not recognized when world maps were first made and published. Even now it is recognized only dimly and somewhat unofficially, as when we say "New York is five hours west of London." For serious map-making purposes we still reckon longitude in degrees and sixtyfold divisions thereof, to conform with the clumsy accepted usage for subdividing angles. And the practice of reckoning it both east and west from the prime meridian of Greenwich is worse still: this makes it difficult for school children to grasp how there can be two different dates at the date line.

So much for divisions of a day and maps of our earth's surface. Our other principal unit of time is the year. This unit defies exact expression in terms of any other, despite many futile harmonizing attempts throughout recorded history. Workable compromises have been devised; we live under one of them albeit not at all a neat one, with deliberately perpetrated irregularities to satisfy the vanity of Roman emperors who are now long dead and quite unlamented.

By this present calendar of ours, there is nothing logical or rhythmical about the lengths of the quarters or the months, nor are the months, the quarters, or the year itself rationally related to the days of the week. To borrow words from a current humorous book-title, this calendar helps us somewhat "to get from January to December," and that is about all.

The United Nations and all the world's parliaments now have before them a practical first step out of this clumsy arrangement, and a very easy step to take: The World Calendar. By this plan, one day in the usual year, but two days in every

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Science students who have learned to enjoy the intricacies of the complicated formulas and mathematical *arcana* of chemistry, physics and other *hautes etudes*, will be intrigued by the proposals of the Duodecimal Society, which is critical of our decimal system and points out the theoretical superiority of a 12-digit method. Mr. Camp has long been a leader in the duodecimal group of mathematicians, scientists and statisticians. Details of the Society's proposals and membership applications may be obtained from the secretary, Ralph H. Beard, 20 Carlton Place, Staten Island 4, N. Y.

leap year, are holidays that are not parts of any week. The remaining 364 days of the year fall into four equal quarters of 13 weeks each.* Every such quarter, and therefore the regularized 364-day bulk of every year, is to begin on a Sunday and end on a Saturday. For illustration it is therefore sufficient to show how a single quarter—say the first one of the year—would appear if scheduled vertically. Such a tabulation convincingly demonstrates how easy the change will be, especially in a year such as 1956 which will begin on a Sunday by both calendars. Dates within the year will be shifted only slightly from the old (many being identical), but months will thenceforth begin only on Sundays, Wednesdays or Fridays, and for six-day work weeks every month will contain 26 working days.

Several governments have already given definite approval to the new calendar, conditional of course on general concurrence. Many Chambers of Commerce, business organizations, and learned societies throughout our own country as well as the world at large, have also recorded their approval. The directors of our own Duodecimal Society have just endorsed, and are submitting to the members for general approval, a resolution calling for adoption of the new calendar. Altogether, the project has strong and steadily increasing support.

I am led to venture three predictions about all this:

(1) I predict general adoption of this calendar within the lifetime of most those who are reading these words.

(2) My second prediction will take much longer to realize; namely, that the months will eventually fall into general disuse. The new calendar makes each quarter contain an exact number of weeks and will inevitably strongly promote the practice, already perceptibly beginning in some fields, of making appointments and designating both past and future dates by the day of the week and the week of the quarter in which they fall.

(3) My third prediction will take very long indeed to be realized, probably centuries. It is this: Some day at long last, we shall begin the year at the winter solstice and not several days later on 1 January. Then the quarters may very simply be named for the seasons with which they will closely coincide: Winter, Spring, Summer, and Fall.

Viewed independently, it is certainly a curious tradition of Western civilization to set the first of the year (1 January) at a meaningless point of the yearly cycle. True, that day is just now the average date (it oscillates somewhat with leap years) when the earth in its orbit is nearest the sun—its "perihelion date" in astronomical language. But this is temporary: the year's schedule is really set to the equinox, as just stated, so that the perihelion date changes by about one day in three centuries and in the course of a thousand centuries will return to its present day of the year, which assuredly will not, in that distant time, be called the first of January.

Miss Elisabeth Achelis, President of The World Calendar Association, has written me: "There is one point in your argument on which I disagree. I do not believe people will ever abandon the

* Why mention only the 13 weeks, what about the 91 days and the three months?— E. A.

monthly division in the calendar, making it a purely numerical system like a railroad schedule. The division of the year into months and weeks is convenient and practical. To blot out months, as you and others have suggested, would be a real loss to civilization; and I, personally, hope it will never come to pass. We continue to have the 12 zodiacal signs of antiquity; and so I hope it will be with the 12 months."

In my reply, I said: "Probably a lot of the old Romans regarded the disappearance of the nones, ides, and calends as *a loss to civilization* too, and even the best of poets sometimes stray so far from common sense as to sing

Do not all charms fly
At the mere touch of cold philosophy?

But the actual universe of science, immutable laws and rigorous reasoning has in itself far more of beauty, grandeur and real poetry than all the little attempts we humans make to explain things we do not understand, and the little usages we insist on clinging to long after they should be outgrown. Your reference to the zodiacal signs of antiquity seems somewhat unfortunate; according to any textbook beyond the most elementary, precision has made all the *signs* move over into adjacent constellations by now; in particular, that of Aries into Pisces, where the vernal equinox is now to be found.

"Probably most of us on the earth today have slight notion of how far precise division of time has utterly replaced ancient vaguenesses. For the latter, recall Isaac Watt's hymn based on the 90th Psalm: *an evening gone* or *the watch that ends the night* were as short intervals as they could express in the days of the Psalmist. Other awkward usages: *the time of greatest fullness of the market* had to do for *about 10 a.m.*, and *when passersby look keenly at each other* for the point in twilight when recognition grew difficult. Is it a loss, that we now replace such vague expressions by numbers read from clock and watch dials?

"Your proposed World Calendar is an important and firm step in the right direction. But that very calendar will inevitably hasten the day when recognized convenience compels the months to fall into innocuous desuetude: they are not equal fractions of a quarter nor simple multiples of a week and cannot be made so.

"I do not understand why you should regret or object to the eventual obsolescence of months.* It will be a magnificent life's achievement for you, to have persuaded the world to adopt so decided an advance as your proposed World Calendar. We pathetically finite humans cannot ask for absolute permanence in anything we do. As one of the great Victorians reverently sang:

Our little systems have their day,
They have their day and cease to be.
They are but broken lights of Thee,
And Thou, O Lord, art more than they!"

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* Convenience is not the only purpose of the calendar. It recalls anniversaries and human associations as well. The beauty of The World Calendar is the coordination of all its various parts so that each quarter has not only 13 weeks but 91 days or 3 months, approximately a season, as well. Months are recognized in Biblical *Revelation:* The tree of life has 12 manner of fruits, and each month has its own fruit. Months will remain in the annals of man's recording as long as the Bible remains; and it is my firm conviction that neither will become "obsolescent."—E. A.

LINKING TIME AND COSMOS

By John J. O'Neill

SOME day we will have houses with built-in calendars, permanent devices that will be useful and timely as long as the house stands. We can then build a monument with a permanent calendar carved into its lasting stones. That will happen, soon we hope, when the human race shows sufficient intelligence to demand calendar improvements that are available but remain unused.

At the present time no calendar is useful for a second year in succession. The average person knows this is true but would be unable to tell just why. If informed that we are still perpetrating the honest ignorances of the ancient Romans and remaking each year the same mistakes that were made more than 2,000 years ago he would be amazed beyond belief.

Never does the average person stop to think that September is a word which means Seventh Month, and it is the name of our ninth month, and that October, November and December are words that mean Eighth, Ninth and Tenth Month, respectively, and we actually apply them to the tenth, eleventh and twelfth months of our calendar. These number names were correct when Rome started the year in March but their use continued when January became the first month.

The manner in which the irregular numbers of days were assigned in random fashion to the various months is less rational. We have inherited in our calendar the bulk of the calendar chaos of the ancient Romans slightly rationalized by the Caesar, Julius, 1,998 years ago, and slightly corrected by Pope Gregory XIII, 370 years ago.

It is chiefly because of the incongruities of the ancient Roman calendar that we are unable to use our calendars continuously, the secondary cause being the fact that the length of the year contains an odd day and a fraction of a day, causing us to use leap years that are one day longer than normal years.

The mechanism that prevents the use of our calendars in a second year becomes apparent if we divide 365.242 198 79, the number of days in a year, by seven, the number of days in a week. The answer is 52, the number of weeks in a year, but there is a remainder of one and slightly less than a quarter of a day. Because this odd day has never been rationalized, each year ends one day later in the week than did the previous year, and in leap years two days. This applies likewise to the starting day of the following year.

We can, however, save our calendars and at the end of 28 years we can start using the series over again. Every twenty-

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This year marks Mr. O'Neill's twentieth year as Science Editor of the *New York Herald-Tribune*. A Pulitzer prize winner in 1937, he has since received many honors for his services to science. He is a member of nearly fifty learned societies and the author of four important books, including the first work on Atomic Energy, written in 1940.

eight years the dates in each month return to the same day of the week, starting with any year. This number is ascertained by taking the number of years (seven) required for the calendar to progress through one week in normal years, and multiplying it by the number (four) of years in the leap-year cycle. This system will work as described until the year 2100, and is still usable then and thereafter if the series is shifted back one year at each centennial year not divisible by 400.

We are actually using a calendar framework that extends back beyond the time of Pope Gregory and the Caesar Julius, back to 1 January, 4713 B.C. In this chronological era, named the Julian Period, we are now in the year 6665 J.P. This era was set up, not in the time of Julius Caesar, but by Pope Gregory, in 1582.

The technical work on the Gregorian calendar, adapting the corrected Julian calendar to the calculation of movable religious feasts by the use of the system of epacts, golden numbers and Dominical letters, was performed by Luigi Lilio Ghiraldi, who was also known as Aloysius Lilius. The larger framework of the calendar was supplied by Joseph Justus Scaliger.*

Scaliger was a resident of Paris at that time but was a member of an ancient Roman family formerly called Della Scala. His father, Julius Caesar Scaliger, a native of Italy, was a physician and classical scholar who achieved outstanding fame, but he left Italy in 1526, in his 46th year, to make his home at Agen, in southern France. His son, Joseph Justus, born here when his father was 56 years old, did not practice medicine but rivalled his father in classical learning and exceeded him as an historian and authority on ancient chronologies which he found in a very confused state because of the lack of a universal calendar. The father was an ardent supporter of the Church of Rome but a rift developed between father and son to the extent that the son became a supporter of the Protestant groups.

Pope Gregory was pleased, nevertheless, to accept the son's advice on the reform of the calendar including the proposed Julian Period. Scaliger described his calendar proposals in "*The Emendation of Time*" which was published in 1583, and 23 years later published "*Treasury of Times*" in which he sought to straighten out chronological difficulties in the historical record.

There is a general belief that Joseph Justus Scaliger named the Julian Period to honor his father, Julius Caesar Scaliger, but there is an equal probability that the father's name is associated with a family tradition carrying the family's origin to the time of the emperor Julius Caesar, so that the name honors equally the father and the Caesar.

At the time the Romans built up their arbitrary twelve-month calendar there were in use by other peoples other systems of time reckoning. The Jewish system was based on months that correspond

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* Scaliger, born in 1540, was the tenth child of Julius C. Scaliger. Both father and son were the greatest European scholars of their time. The son mastered Latin, Greek, Arabic and Hebrew in his teens. He was the first to lay down sound rules of textual criticism, which led him to a study of historical chronology and the establishment of a standard system of reference for dates under various ancient calendars. With incredible patience, sometimes with a happy audacity of conjecture which itself amounted to genius, he prepared his Thesaurus of Dates, in which he collected, restored and arranged every chronological relic extant in Latin and Greek.

to the period of the moon, and the number of moons in a year is irregular. The Greek rulers used a chronology based on a 15-year period of indictions, or announcements of times for paying tribute, and in fractional periods times for paying taxes. In addition the numbered four-year periods of the Olympiads were used. There was also the random method of numbering the years elapsed since a given king ascended the throne.

Events throughout history were recorded in any of these systems and it was with great difficulty that historians achieved a correct correlation of any one system with the others. The Romans in their world dominion found it necessary to rule the various peoples in terms of these diverse chronologies and it is understandable that they found it almost impossible to bring order into the world dating system.

Scaliger proposed to Pope Gregory a chronology framework which would unify the indiction, Roman and lunar systems. It was achieved by multiplying the 15 years in the indiction period by the 19 years in the lunar period required for eclipses to return to the same day of the year, and the 28 years in which the Roman calendar would repeat the same order of days and dates. The product of these numbers was 7,980 years. If all three cycles started in the first year of such a period and continued to run their separate periods, it would require 7,980 years for all three to again have their first years coincide.

By taking the current relationships of the cycles Scaliger calculated the beginning of the Julian Period as taking place at 1 January, 4713 B.C. Through the lunar cycle, and the corrected equinoxes in the Roman calendar, the Julian Period was tied to the astronomical cycles of the heavens and could thus be correlated with the Era of Nabonassir dating back to 22 April, 748 B.C. in Babylon which the Greek astronomers continued to use and to which many ancient historical events could be related.

Scaliger, by a stroke of genius, proposed that every day in the Julian Period be given an identifying number. This would give a continuous record of days despite the 10 days which Pope Gregory planned to eliminate from the calendar. These days were to be identified as Julian Days, abbreviated J.D. The first day was 1 January, 4713 B.C., and the last day of the period will be 2,914,631 J.D. corresponding to 31 December, 3267 A.D.

The calendar of the astronomers is just this series of numbers. It is the world's simplest calendar and contains neither weeks nor months nor years. All astronomical events are dated merely as a number and a fraction. A year, or any cycle, can be indicated as starting at a precise fraction of a J.D. and continuing to a precise fraction of another J.D.

This is the world's simplest calendar, but is it a perfect calendar? No, far from it, because nature provides days and (moon) months that vary widely in their duration. We have two kinds of days, five kinds of lunar months, and four kinds of years no two of which have the same length. They can, however, all be recorded and calculated accurately in terms of Julian Days.

Great simplicity in the astronomers' calendar is achieved at the expense of a tremendous burden of astronomical knowledge required of its users. It is not practical for everyday use. Its virtues

add up to a nameless calendrical vacuum for the average person.

Somewhere, deep in the human personality, there is a sense of organization which requires that all things be related harmoniously to all other things. Out of this has grown our belief that the universe is a cosmos, an orderly arrangement in which every atom is resonant to every other atom, and star to star; that we as individuals in our design and totality are related not only to all other individuals but also to the atoms and the stars, and that all are moving forward in time in cadences that are in tune with the rhythms of a universal pattern which expresses fundamental principles of the Creator. Our calendar, therefore, becomes in its rhythm of days an expression of the pulsations of the primeval pattern through which we are progressing in every moment of our lives, and it must, of necessity, contain a pattern in which each day is related to every other day.

Perfection in a calendar would be desirable, but it is as unattainable as perfection in our everyday lives. Although perfection is unattainable, improvement is possible, and it is within our power to determine its magnitude through continuing advances.

The proposed World Calendar provides the greatest amount of improvement that can be achieved in calendar reform with the least amount of change. The change from the Gregorian-Julian calendar is really one of very small magnitude. It is one which the people will assimilate mentally in a single year as easily as we now shift from an ordinary to a leap year, and with as little resulting sense of disorganization.

Improvements that will result are great out of all proportion to the magnitude of the changes that will bring them about. The principal changes are those that have long been begging to be made—taking undersize February out of the runt class and locating the leap-year day at a sensible point. Four months are shortened, each by one day. The four days are redistributed, one to the rationalized Worldsday at the end of the year, two to February to bring it up to standard size and one to April to equalize it with other quarter months.

As a result of these changes we have a year with equal halves and equal quarters. Each quarter is made up of 91 days divided into three months of 31, 30 and 30 days respectively. Despite the extra day in the first month of each quarter every month in the year has exactly 26 business days.

Since the 31-day months are uniformly distributed throughout the year it will not be difficult to memorize them. We memorized the old irregular arrangement with the aid of a bit of verse. A new stanza may be in order for the new calendar. To aid in getting the poets to provide a better one, I suggest:

The months from thirty days don't vary
Except each quarter's first goes over
To thirty one for January
And April, July and October.

WHAT ARE WE WAITING FOR?

By Dr. Joseph J. Jones
English Department, University of Texas

Professor J. W. Baldwin of the College of Education at the University of Texas, who assisted Dr. Jones in this interesting project, comments: "There are thousands of English teachers in our schools and colleges who will appreciate and benefit by the methods outlined in his report. It is safe to conclude that students master English composition at least as effectively when handling topics dealing with scientific and social progress as they do when the assignment touches topics of no such current significance. Assuming this is true, it is to be hoped that many English instructors will follow suit and assign such subjects as The World Calendar, in order to increase the value of instruction in writing good English."

THAT information about The World Calendar is of interest to college students has recently been shown by an exercise in English composition at the University of Texas. The purpose of the project was to teach students how to handle a mass of collected data—how to select and maintain one controlling idea as the subject, how to eliminate or subordinate secondary facts, how to stress, supplement and illustrate primary facts, how to condense, summarize, supply transitions and all the other techniques that go with preparing a careful expository essay.

To this end the faculty prepared a set of "data sheets," which were placed in the hands of each student for study. The sheets contained 27 items of information about calendars and calendar reform, ranging all the way from two brief sentences to several paragraphs, and presented in scrambled sequence.

The result was entirely successful; interest in the subject was keen, as students found themselves being given a new kind of subject-matter to think about. A great many, after studying the facts and drawing conclusions as to the desirability of adopting The World Calendar, were led to ask: "What are we waiting for?" It is the kind of exercise that can be recommended for use in either freshman classes or advanced exposition; the essay may vary from an informal few hundred words to a full-length research paper. [Of course The World Calendar Association will be happy to cooperate with all interested college English departments by supplying basic literature and comprehensive research material.]

A few extracts from our data sheets will serve to indicate the nature of the facts supplied to our students as a guide and beginning for their research and planning:

Item 1. Julius Caesar undertook calendar reform in 46 B.C. By this time, the calendar had become unmanageable.

Item 4. The movement for calendar reform is international in scope. Organizations like The World Calendar Association are advocating it in 36 countries. It was one of the

most active projects before the League of Nations, and it is now before the United Nations, where the Secretary General (Trygve Lie) has submitted a report on its merits.

Item 5. Advocates of The World Calendar point out that under the new arrangement "grasshopping" holidays will stay put. The common holidays in the United States, under The World Calendar, would occur on these dates and days: New Year's Day, January 1 (Sunday); Washington's Birthday, February 22 (Wednesday); Lincoln's Birthday, February 12 (Sunday); Memorial Day, May 30 (Thursday); Independence Day, July 4 (Wednesday); Labor Day, September 4 (Monday); Columbus Day, October 12 (Thursday); Election Day, November 7 (Tuesday); Thanksgiving, November 23 (Thursday); Christmas, December 25 (Monday).

Item 12. There is some sentiment in favor of moving certain midweek holidays to Monday. Among those more easily moved are Memorial Day and Election Day. Under The World Calendar, Texans would find Texas Independence Day, March 2, falling on Saturday, and San Jacinto Day, April 21, would also come on Saturday. Among our numerous "minority" holidays, Cinco de Mayo would fall on Sunday, and "Juneteenth" on Tuesday.

Item 25. The Babylonians devised intercalary months to keep their calendars straight with the seasons. A period of days inserted to bring the calendar up to date is called an intercalation. The intercalary periods were inserted whenever the astronomers advised the king that the calendar had become irregular.

Item 26. The method of deciding upon the annual date of Easter was promulgated by the Council of Nicea in A.D. 325. The Council decreed that Easter should fall on "the first Sunday following the Paschal Full Moon, which happens upon or next after the 21st of March." This sounds both arbitrary and capricious, although there was sufficient reason for it at the time. The pilgrims traveling to the great yearly Easter festivals needed moonlight for their journeys. The Paschal Full Moon, by the way, is an ecclesiastical, not an astronomical, designation.

Item 27. The World Calendar, the proposed improved system that has been approved by 17 governments, is the composite of many minds and many years of study and research. It was first suggested by a Roman Catholic priest, the Abbot Marco Mastrofini, in 1834. He advanced a plan for a 364-day year, with the 365th day added as an extra day outside the week. By this simple method, every new year unfailingly begins with Sunday, and the calendar becomes perpetual—a reliable and steady instrument of time. The Abbot is the father of modern calendar reform. The World Calendar contains his stabilizing feature of one or two extra days, and is a simple and easy formula whereby forevermore every quarterly period of the year is identical in format.*

Each student was asked to read and study the data sheets, and come to class prepared to offer suggestions for developing the theme. After class discussion, there followed a specific assignment—the writing of a paper on one of the three following subjects: I. *How Permanent Is Our Calendar?* Thesis: Our present Gregorian calendar is not a permanent institution, but only the latest of many modifications of the calendar. II. *What Is The World Calendar?* Thesis: It is a systematic and perpetual rearrangement of the present Gregorian calendar. III. *Why Should We Adopt The World Calendar?* Thesis: It offers numerous advantages over the present calendar in many divisions of human affairs.

It was pointed out that the three subjects, taken together, would make a single long and comprehensive essay, but that any of the three might be treated separately. The students were asked, in the outlines they made, to indicate after each outline-

* A few items have been altered slightly from their original form, in order to make this abridged presentation a little more complete.

heading the numbers of the sections in the data sheets which should be used. This gave the instructor a quick indication of how much material the writer proposed to include, and it had the additional advantage of showing the student how he had brought order out of what was originally not a logical sequence.

Instructors reported good results from this exercise: students were genuinely interested in discussing the material—whereas certain exercises previously used had seemed too statistical and dry. The young writers were able to produce generally satisfactory papers on the basis of the data supplied, with a little additional research.

It was noted that the subject invariably had some personal appeal to the student —a result not often attained by the average subject which lends itself at all well to the purposes of this kind of exercise. Many of the students, not having heard of The World Calendar before, felt that in addition to working out a somewhat exacting assignment in composition, they had received some useful information.

It is suggested that other teachers might find a similar project workable and profitable on the basis of the pattern here outlined. There is of course much absorbing information available on numerous types of historical calendars, and comparison with The World Calendar will indicate immediately the desirable practical features of the latter. Application of the new calendar to local situations (such as the Texas holidays mentioned in Item 12 of the data sheets) adds a further dimension of student interest. The uniformity of the assignment enables an instructor to judge the papers objectively, and at the same time there is enough variety to avoid the monotony of most "prefabricated" exercises. Since each student has been over the same material, the resultant papers can be used for comparison and criticism in subsequent class meetings.

There are additional opportunities—especially—in the use of visual materials and in oral presentation—that we did not develop in connection with this particular exercise. The kind of data a student handles in a longer paper, especially in the formal research-paper or technical report, often calls for tables and illustrations of a kind that this subject abounds in: neat and clear presentation (by drawing or precision typing) of The World Calendar itself; comparative tables of holidays; graphic methods of showing irregularities in the present calendar—all these and more might be introduced.

Similarly, classes in Speech or classes in English which stress oral English will find in The World Calendar question a source of interesting short talks and round-table discussions. There are not many topics which have as broad and as immediate an appeal; and the cultural values of looking into history in all parts of the world, not to mention the political values of studying the possibility of worldwide agreement on calendar reform as an opening wedge to other agreements, are plainly evident.

Whenever we can make our assignments more informative and more interesting to our students, we help ensure better work in return. The World Calendar, we have found, is a very good assignment to use. So much the better if it stimulates the student to do something toward bringing about this reform—through discussing it with parents and friends, and through letters to the State Department urging support of the plan in all international forums.

Exercise in Esperanto

POR TUTHOMARO—UNU KALENDARO

By W. Rombouts, Hoorn, Netherlands

JAM tre longe la homoj sentas la bezonon mezuri la tempon, tiel same por mallongaj kiel por longaj periodoj. Por la mallongaj periodoj ili uzas horloghojn, por la longaj kalendaron.

La horloghoj estis en la komenco tre simplaj: oni uzis sunajn, akvajn kaj sablajn horloghojn. Sed iom post iom ili pli kaj pli perfektighis, kaj nun oni ech povas mezuri la treege mallongan tempon de 1/8000 sekundo.

Tute malsama ol la evoluado de la horlogho estas la historio de la kalendaro. Efektive ni ankoraŭ uzas la kalendaron, kiu estis iniciata dum la regado de la roma imperiestro Julio Cezaro, do antaŭ chirkaŭ 2000 jaroj. Estas vere, ke ghi estis korektata en la jaro 1582a de la Papo Gregorio XIIIa, sed la reformo ne estis tre grava.

Chu la nuna kalendaro estas tiom bona, ke ghi ne necesas reformon? Tute ne. Kontraŭe, ghi posedas multajn neperfektajhojn, de kiuj ni nur mencios la plej gravajn.

Tial ke la jaro havas unu tagon pli ol 52 semajnojn (superjaro ech du tagojn pli) la tago de la semajno neniam estas la sama en sinsekvaj jaroj. Do se iu unuigho estis fondata ekz. je merkredo, povas esti ke post kelkaj jaroj la fondotago revenas je dimancho aŭ je alia tago, kiun oni ne povas festi pro religiaj aŭ aliaj motivoj. Ankaŭ diversaj festotagoj, ekz. la Kristnasko, havas chiujare alian tagon. Povas esti ke la 23a de decembro estas dimancho, do la 24a estas lundo. Tiam oni devas labori la 24an, kaj denove estas libera la 25an. Tiel la regula laboro estas interrompata, je la malprofito de la produktado.

La libertempo de la lernejoj devas esti fiksata denove chiujare.

La statistiko estas grave malhelpata de la fakto, ke la monatoj kaj kvaronjaroj ne havas egalan nombron da tagoj. (7 monatoj havas 31 tagojn, 4 havas 30 ta-

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One Calendar for One World. Long ago people felt the necessity of measuring time, both by shorter and by longer periods. For the shorter periods they use clocks, for the longer ones a calendar.

In the beginning clocks were very simple: people used sundials, waterclocks and hourglasses. But gradually they grew more and more perfect, and now it is even possible to measure the very short interval of 1/8000 of a second.

Quite contrary to the evolution of the clock is the history of the calendar. In fact we still use the calendar which was instituted during the reign of the Roman emperor Julius Caesar, so about 2000 years ago. It is true that it was reformed in 1582 by Pope Gregory XIII, but the reform was not very important.

Is the present calendar so perfect that it needs no reform? Not at all. On the contrary it has many defects of which we shall only mention the most obvious ones:

As the year has one day more than 52 weeks (a leap-year even two days more) the weekday is never the same in successive years. So if any society was founded e.g. on a Wednesday, it may be that after some years the day of foundation falls on a Sunday or on another day, which we cannot celebrate for religious or other reasons. Also several holidays e.g. Christmas

gojn kaj unu 28 aü 29; la kvaronjaroj havas 90, 91 aü 92 tagojn). Monato povas havi 4 aü 5 dimanchojn. Tiamaniere estas neeble kalkuli la profiton en unu monato aü kompari ghin kun la sama monato en alia jaro.

Chu ĉstas eble forigi tiujn mankojn? Certe, kaj ech estas tre simple fari tion. Oni nur akceptu la MONDKALENDARON.

Kio estas Mondkalendaro? Jam en la jaro 1834a la abato Marco Mastrofini proponis kalendaron de 364 tagoj kun 365a tago ekster la semajno. Tia kalendaro estas nun propagandata de la "World Calendar Association," Novjorko, Usono. Ghi havos kvar egalajn kvaronjarojn de 91 tagoj. Chiu kvaronjaro komencos per dimancho kaj finighos per sabato. La monatoj de kvaronjaro havos respektive 31, 30 kaj 30 tagojn. La lasta de decembro estos do sabato. Tiam sekvos ankoraü unu tago "ekster la semajno," nomata "*Mondotago*." Ghi estos festotago. En superjaro oni havos ankoraü unu tagon ekster la semajno, la "*Supertagon*," kiu estos la tago post la 30a de junio.

Tiu chi kalendaro ne diferencas multe de la nuna, sed ghi forigas chiujn ghiajn mankojn. La sama dato estos chiam la sama tago de la semajno. La monatoj kaj kvaronjaroj havos chiam la saman, fiksan nombron da tagoj. Ankaü la festotagoj estos fiksitaj, ekz. Kristnasko estos chiam lundo (25a) kaj mardo (26a de decembro). Chiu monato havos 26 labortagojn.

Jam 17 landoj aprobis la Mondkalendaron. Ghi estas vere internacia afero, kaj ni esperas ke ankaü la Esperantistoj akceptos kaj propagandos ghin. La Esperanto-organoj estas petataj represi chi tiun artikolon. La legantojn ni petas sendi konsenton al la World Calendar Association, 630 Fifth Ave., New York 20, U.S.A., aü al la verkinto.

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fall on another day every year. It may be that the 23rd of December is a Sunday, so the 24th is a Monday. Then you must work on the 24th and you have a holiday on the 25th. So regular working is interrupted to the detriment of production.

School holidays must be fixed anew every year.

Statistics are greatly hampered by the fact that the months and quarters have no equal number of days. (Seven months have 31 days, four have 30 days and one 28 or 29; quarters have 90, 91 or 92 days.) A month may have four or five Sundays. So it is not possible to calculate the profit in one month or to compare it with the same month in another year.

Is it possible to do away with these defects? Certainly and it is even very simple to do so. If we only accept The World Calendar.

What is The World Calendar? Already in 1834 the abbot Marco Mastrofini suggested a calendar of 364 days with a 365th day "out of the week." Such a calendar is now propagated by "The World Calendar Association," New York, U. S. A. It has four equal quarters of 91 days. Each quarter begins on a Sunday and ends on a Saturday. The months of a quarter have 31, 30 and 30 days respectively. The last day of December is consequently a Saturday. Then follows still one day "out of the week," called Worldsday. It will be a holiday. In a leap-year there is still another day out of the week, viz. "Leapyear Day," which will be the day after the 30th of June.

This calendar does not differ much from the Gregorian but it does away with all its defects. The same date is always the same weekday. The months and quarters have always the same fixed number of days. Also the holidays will be fixed, e.g. Christmas will always be on Monday (25th) and Tuesday (26th of December). Each month will have 26 weekdays.

Already 17 governments have approved The World Calendar. It is really an international affair and we hope that the Esperantists will also accept and propagate it. The Esperanto-periodicals are requested to copy this article. We request the readers to send their approval to The World Calendar Association, 630 Fifth Ave., New York 20, U. S. A., or to the author. (W. Rombouts, Hoorn, Netherlands.)

PRACTICAL PATH TO ADOPTION

By Professor Joseph Emory Avent, University of Tennessee

GENERAL APATHY appears to be in command of the forces of inaction with regard to adoption of The World Calendar. Opposed to him are the ever-advancing supporters of General Progress.

Old Man Apathy has delayed many a change for the better in human affairs. But he has seldom thwarted completely or permanently any change that made for the successful forward-march of the human race. And the adoption of The World Calendar, being such a cause, will inevitably be achieved.

There are those among the followers of General Apathy who say that there is no "widespread popular demand" for The World Calendar. Even if this were a valid argument—which it is not—it depends mainly on what is meant by the word "widespread." Of course, there has been no uprising of the people on its behalf, nor any referendum vote to express their urgent desire for the change. On the other hand, many of the most useful reforms ever wrought in human life have been ushered in without such "widespread" popular demand. There has never been an opportunity for the people in mass to express themselves for or against revision of the old-fashioned calendar. The lack of such expression of popular opinion is no legitimate argument against its receiving full consideration in any tribunal of competent jurisdiction.

Looking back hastily into history, we find no record of "popular demand" for the great discoveries and inventions of the past—no demand for the railroad, the telegraph and telephone, the automobile, radio and television. No popular demand for the electric light or the airplane, none for the discovery of uranium or the atom bomb which followed its application and utilization.

There was no popular demand—in fact, there was frequently definite popular resistence—for the cotton gin, or the typewriter, or the washing machine, or frozen foods. Yet after these things were invented or discovered, popular endorsement and utilization soon followed. There was no popular demand for the discovery of America.

In the field of medicine there was no popular demand for vaccination against smallpox, or rabies or typhoid fever; no demand for protection against other preventable diseases. There were actually backward people who proposed to have vaccination abolished or legally prevented. In political life there was no popular demand for the Constitution of the United States or for the Covenant of the United Nations; yet now no one except an insane enemy of freedom would propose to abrogate them. In social and commercial life there was no popular demand for the establishment of Standard Time or the International Date Line.

The changes that bring great blessings to mankind do not generally come from

an uprising of the people. There is seldom a popular demand for them. They are conceived in the minds of the great thinkers of the race; such changes when made available to the people become a continuing blessing to all men.

Democracy is a major way of life, with applications in many subsidiary patterns of human experience and behavior. It is the glory of democracy that any one or more of its minor divisions may be changed, reformed or revised; such changes may be proposed, considered, and if found better, adopted for future use. Constitutions and Covenants are not set up to be perpetual barriers against the social, economic, commercial and political progress of mankind. They are rather avenues through which the aspirations and ideals of the leaders of the people may get a hearing before the bar of public opinion, by means of which the merits and demerits of such aspirations and proposals may receive critical examination. Thus, from such aspirations and proposals, the great social utilities are lifted, altered and improved for the benefit of mankind; and the erroneous, useless and harmful factors are eliminated and discarded.

It is a principle of democratic political life that "the right of petition shall not be denied." This is especially true when the petitions come in the form of endorsements from great bodies of competent opinion, or from leaders and thinkers. In the case of calendar revision, we have petitions from organizations representing business, industry, labor, science, education. There are petitions and endorsements from practical folk such as engineers, from the national central body of women's clubs, from churches, schools and colleges. In the present situation, General Apathy appears to be working through the U. S. State Department to deny the right of petition, and to refuse the right to a hearing, in the only tribunal of competent jurisdiction and of world-wide scope. Up till now, there has been no full hearing either in the Congress of the United States or in the General Assembly of the United Nations. Such hearings are, I think, an inherent right of free peoples, in the exercise of which all the processes of democratic government will be benefited.

What shall we do about it? How are we to secure a hearing on the merits of The World Calendar? How shall we get it before the United Nations? What is to be our strategy and tactic for winning the kind of formal consideration which can lead to adoption?

I'll concede there's no magic formula for obtaining action on the calendar. But on the other hand it has long since become evident that placid acceptance of the status quo will get us nowhere on this question. As on many other questions relating to the common good, we must find a way to stimulate our somnolent legislators or we will further reduce our status as free, vocal and independent citizens.

If we Americans can make up our minds to *act,* there are a couple of votes to think about. One, of course, is in November, when hundreds of Senators and Congressmen are being elected. Why shouldn't the candidates be asked whether they will support calendar reform and work for it?

There is, also, a second vote. Even the inflated two-cent postcard is still the biggest bargain in the country—because, if we want to use it, it gives us the privilege of expressing our views to the men in public office; and what's more, expressing them

on a specific issue, such as calendar reform. The trouble is, most of us are either too dignified or too modest, or think we are too busy, to use that second vote the way we should.

We have some conscientious, thinking men in Washington who are trying to find paths to an improved design for living. Senator Kefauver and several of his colleagues have declared themselves for calendar reform. We can give these men our encouragement, and we can do it both as individuals and as organized social or business groups. And we can at the same time oppose and discourage inertia and lack of interest in this progressive cause.

We who live in the state of Tennessee are proud of the leadership which our Senator Estes Kefauver has given to the cause. His statement of his attitude is a model for all legislators: "Every individual, worldwide, would derive immeasurable advantages by the adoption of such a system. A perpetual calendar offers benefits to all walks of life. I urge the United States delegation to the United Nations to join in ardent support of The World Calendar. Its adoption will leave for all future generations a lasting heritage to every country, every government, as well as every individual. The nations of the world need a logical and perpetual time system, and have needed it for many generations."

I am more optimistic than I was a few years ago—because I believe there is a growing appreciation of the deficiencies and inconveniences of the old calendar, an international awareness that was not so evident five years back. Here is something else we can do. Individually and collectively we can grasp any and every opportunity to maintain and broaden that awareness—to stimulate activity on the part of our friends, neighbors and associates.

There is one very special group whose influence is highly important in matters of this kind. I refer to the editors of newspapers and magazines. During the past ten years, they have written a million words of endorsement of calendar reform. Only a few weeks ago, a half-page editorial in the *New York Daily News* attracted the attention of 2,500,000 readers. Syndicated editorials on the subject have frequently been printed in as many as 200 different newspapers. Calendar reform has a large and enthusiastic following in the press, both at home and abroad.

But there must be no let-up in this constant process of education and promotion through the printed word. We can all do our share by asking editors to continue their advocacy, and by ourselves writing "Letters to the Editor" as frequently as possible. The power of the press is a mighty arm toward the achievement of our goal.

A few years ago a society of newspaper publishers, meeting in Washington, carried their advocacy of calendar reform to the highest tribunal in the land. Other newspaper organizations, particularly those representing the editorial profession, should be urged to take similar action. The accredited correspondents at the United Nations ought to find here a subject of perennial interest. Magazines, trade publications and learned journals should follow the example of *Reader's Digest, Saturday Evening Post, Collier's* and other leading publications, in giving generous space to advocating a reform which will benefit them and all other sections of the public.

LAWYERS SEE GAINS FROM REVISION

By James L. C. Ford
Dean of Journalism, Montana State University

FACULTY members of the Law School at Montana State University—sometimes called the "Harvard of the West," believe that The World Calendar offers worthwhile advantages to the legal profession. They point out that its adoption will bring decided and positive legal gains because of its regularity and its perpetual character, as contrasted to the present haphazard methods of calculating the passage of days and months under the law. After careful consideration, they go even further and suggest that the new calendar will improve or assist in several ways the present legal practices and procedures regarding days and dates.

Charles William Leaphart, dean of the Law School for 32 years and former head of the appellate section of the lands division of the U. S. Department of Justice, is a lawyer and teacher of lawyers of long experience. "There isn't any doubt that The World Calendar is a sensible idea," he said. "The only important opposition it has encountered is human inertia. From the lawyer's viewpoint, it has advantages which are clear as crystal."

At present, he pointed out, the legislature of Montana has to meet and adjourn if its initial meeting date in January falls on 1 January. The same situation obtains in relation to court calendars which may have session dates falling on holidays. In such cases, adjournment also has to follow to the next working date. The World Calendar would go far towards elimination of such difficulties.

As testimony to the importance of the calendar to the law and lawyers, Dean Leaphart called attention to the Revised Codes of Montana, which have a chapter specifically concerned with the calendar and time, and their interpretation in legal procedures. This chapter runs as follows:

4277: *Time, How Computed.* Time is computed according to the Gregorian or new style; and the first of January in every year passed since 1752, or to come, must be reckoned as the first day of the year.

4278: *Leap year.* Except the year 1900, every fourth year, which, by usage in this state, is considered a leap year, is a leap year consisting of 366 days.

4279: *The year and its parts.* The term "year" means a period of 365 days; a half-year, 182 days; a quarter of a year, 91 days; and the added day of a leap year, and the day immediately preceding, if they occur in any such period, must be reckoned together as one day.

4280: *The week.* A week consists of seven consecutive days.

4281: *The day.* A day is the period of time betwen any midnight and the midnight following.

4282: *"Daytime" and "nighttime" defined.* "Daytime" is the period of time between "sunrise" and "sunset," and "nighttime" is the period of time between "sunset" and "sunrise."

10707: *Computation of time.* The time in which any act provided by law is to be done is computed by excluding the first day and including the last, unless the last day is a holiday, and then it is also excluded.

Although some legal difficulties might arise in connection with the initial adop-

tion of The World Calendar, the end results would show a net gain, in the opinion of William H. Coldiron, assistant professor of law, and former assistant attorney general of the state of Montana.

"One definite advantage would arise from the situation where the statutes designate that jury terms must begin on the first Monday in September and January," Professor Coldiron pointed out. "Now the first Monday in September always is Labor Day and the first Monday in January often may be New Year's Day. The calendar change would take care of the latter conflict automatically because The World Calendar places the first Monday on 2 January, the day after New Year's. Of course, the Labor Day situation still would have to be remedied, for it still would fall on a Monday. This can be done by statute.

"Another gain would come as a result of the Montana constitutional provision that the legislature must meet on the first Monday in January succeeding the general election. Under The World Calendar, the first Monday would fall on 2 January, as I have mentioned. This would eliminate the necessity for meeting and then adjourning as a result of the New Year's holiday coinciding with the date, as often happens in the present calendar.

If The World Calendar should be adopted, Professor Coldiron said, there would have to be some adjustments at the time when it first is put into effect.

"With the changeover," he explained, "certain contracts would be affected as a result of days being added or subtracted. Take a loan for three months from 1 January to the end of March. Under the proposed reform, February would have two additional days. In a large loan, the impact on amounts of interest paid would have to be considered."

Another appreciable gain would be experienced in the courts, he felt, as a result of the increased regularity and dependability of the calendar. Witnesses who stumble and are confused in their testimony regarding the dates of certain events would be assisted in pinning down calendar dates.

"That happened . . . let's see, two days before my birthday, and that's on 7 April which is a Saturday. Oh, yes, then the assault took place on Thursday, 5 April," he smiled, as he gave the example.

In the training of legal students, the law professor said, there also would be a favorable effect on the school calendar itself. It could be the same from year to year, with each quarter or semester beginning or ending on a regular date. Courses and curricula would be established without the necessity of annual changes and shifts, which cause so much annoyance under the present system.

Expressing himself as sympathetic to the general proposal of The World Calendar, Professor Edwin W. Briggs, who specializes in research in the conflict of laws, stated that the plan certainly should prove a substantial advantage to the business community. Professor Briggs, who holds law degrees from Harvard and Oklahoma, teaches courses in "Business Organizations" and "Partnerships and Corporations."

"Undoubtedly The World Calendar would aid in some legal activities such as the arrangement of court calendars," Professor Briggs held, "and this might make it easier for practitioners to keep track of their schedules. Also it conceivably would offer some assistance to recall by

witnesses of dates or events and thus simplify the problem of proof.

"So far as the passage of statutory periods is concerned, such as the service of process, the filing of exceptions or appeals, the present system is fairly simple. Even the handling of holidays is not a great difficulty, because we have learned to accommodate ourselves to the inefficiencies and irregularities of the current calendar."

The corporation counsel would benefit as would other individuals in the business world from the decided merits of the balanced quarters in The World Calendar, Professor Briggs believes.

"Certainly comparative analysis of business records and data would become more accurate," he said, "and the lawyer with much corporation business is quite involved in such analysis. For that matter, the general practitioner also would benefit in this regard."

Dixon Professor of Law, J. Howard Toelle stated quietly but firmly that he feels The World Calendar plan is so reasonable, so logical, that he can see no arguments against it. Professor Toelle holds law degrees from Harvard and Indiana.

One of the questions he did raise, however, concerned the "W" days, especially that at the year's end, and legal interpretations as to their status as Sundays, holidays, or working days. In construing contract provisions and in the handing down of sentences, a "W" day he felt would have to be regarded as a holiday. Thus a contract would become effective on Monday, 2 January. A sentence of a year and a day, if begun on 1 January of one year would presumably end on 1 January of the next year, with the prisoner released on 2 January.

Professor Toelle pointed out that the plan would certainly regularize election days and other fixed legal dates. Election day, nationally, probably would fall always on Tuesday, 7 November, as the Tuesday after the month's first Monday.

"This would be a decided convenience in planning—for public officials and businessmen alike," he said.

Tax dates would be fixed, occurring on the same day of the week and the month, year in year out, Professor Toelle indicated.

"Such federal tax dates, of considerable importance to lawyers and industry," he said, "would have definite and recurring stations in the calendar. That's a considerable advantage. The first such tax date in the year, 15 January, would fall on a Sunday, and I suppose the taxpayer would be allowed to file his return on the following Monday, 16 January. The other three dates, 15 March, 15 June, and 15 September, all are Fridays, thus allowing a full business week for the final preparation of tax returns.

"Such a plan undoubtedly would regularize the work of the lawyer and courts," he said in summary. "It would be a net gain, to be welcomed by the legal world."

In arranging court calendars, in regularizing calendar dates involving legal action such as tax payments, in aiding witness recall, as well as in other activities affecting the bar and the courts, The World Calendar has merit and can benefit the legal world, these eminent law teachers agree. In their cautious professional manner, they unite in saying, "It offers certain general and specific advantages; it presents no obstacles."

TWO HUNDREDTH BIRTHDAY

By Harold Watkins, O.B.E.
From London Scope, Magazine of British Industry

SUNDAY, 14 September 1952, will be a notable day. It marks the completion of exactly two hundred years of operation in Britain and America of our calendar—the Gregorian or New Style Calendar.

In the year 1752 the day which should by the Old Style Calendar have been 3 September became instead 14 September. It was the culmination of 170 years of controversy and argument.

Incidentally it made the September of that year the shortest month history has on record. It contained nineteen days, and looked like this:

S.	M.	T.	W.	Th.	F.	S.
		1	2	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Now, another reform of the calendar is more than due. One hopes that it will not require another 170 years to bring it about.

The defects of the calendar we use today may be summarized as follows:

1. The months have four different lengths: 28, 29, 30 and 31 days.

2. Each year "borrows" a day from the following year (two in leap years), so that no date falls on the same day of the week in two consecutive years.

3. A year, or a month, or a quarter, can (and does) begin on any day of the week.

4. The four "quarters" are not quarters at all: they consist of 90, 91, 92 and 92 days in ordinary years, and 91, 91, 92 and 92 days in leap years; nor are the half-years equal halves—in ordinary years they have 181 and 184 days, and in leap years 182 and 184 days.

5. Because a month can begin on any day of the week and there are four kinds of month we have 28 different month-patterns.

6. There is no correspondence between dates and days from week to week, from month to month, or from year to year. To find the weekday of a date in the fairly far past or in the future requires complicated and disproportionate computation.

7. In all months each day of the week occurs a minimum of four times; in a month of 29 days one day of the week occurs five times; in a month of 30 days, two days of the week occur five times; in a month of 31 days, three days occur five times. This erratic occurrence of the days of the week shifts from month to month.

8. The number of working days, i.e., weekdays, varies with the months, from 24 to 27.

All of these faults arise from the irregular division of the year, and have been inherited from Roman times. When, in 1582, Pope Gregory XIII first introduced his reformed calendar into Europe, his reform ignored this aspect of the problem. He sought only to correct the then annual

error in the Julian (Old Style) Calendar which, since Julius Caesar gave it to the Roman Empire in 45 B.C., had been slowly throwing it out of step with the seasons, or, more specifically, with the Equinoxes.

That error arose from a miscalculation of the length of the year, which Caesar had taken as 365¼ days, whereas its true length is a little less—precisely 365 days 5 hours, 48 minutes 46 seconds. Such an error seems trifling, but it was cumulative and in the course of centuries the Julian calendar had drifted. By Gregory's day it had "lost" ten days. By the dropping of ten dates (in Britain, 170 years later, it required eleven) he put it in step again, and by the ingenious Gregorian rule of omitting three leap year days in every 400 years it was set to keep in step.

For dealing with the centuries the Gregorian calendar was an outstanding achievement, and is practically perfect. What slight error remains will require 3,323 years to accumulate to a single day. It need not concern any but the astronomers. What is important today, whether from the social or the commercial angle, is how to make more uniform and convenient the very irregular and haphazard divisions of a year into months.

It is not often realized just how inconsistent the calendar can be, until one makes actual comparison of, say, a particular month in different years. Let us take January in recent years as an example.

In January 1947 there were four Saturdays and four Sundays; in 1948 five Saturdays and four Sundays; in 1949 five Saturdays and five Sundays; in 1950 four Saturdays and five Sundays. In both last year and this year there were four of each again. This sort of series can happen with all the 31-day months, varying the number of working days in one year as compared with that before or after it. Only careful computation will tell us how the month will shape in any future year.

For calculating production or progress records, whether by months, quarters, or half-years, the calendar is therefore as inefficient as it could be, and business suffers. It is for this reason that many firms divide their production periods and general accounting into even four-week periods for purposes of comparison, but the fact that no two consecutive years begin on the same day of the week still makes long-term comparisons difficult.

But if the calendar can be an accountant's nightmare, it can equally be a mathematician's delight, and all sorts of formulae have been devised to make exact periodic calculations possible. One method was described recently in the *American Statistician,* as a means "for measuring and eliminating the effects of calendar shifts from series of monthly data." It is too complicated even to summarize here, but some idea of its content is given by the following impressive formulae:

$$\text{Index for an a-month equals } \frac{4\,Sa + 4\,Su + 22.66}{4.38\,Sa + 4.38\,Su + 21.90}$$

$$\text{Index for a b-month equals } \frac{5\,Sa + 4\,Su + 21.66}{4.38\,Sa + 4.38\,Su + 21.90}$$

and similarly for a c-month and a d-month, where these letters indicate months with four Saturdays and four Sundays, or five Saturdays and four Sundays, etc., and proportionate values are given to full working days, Saturdays and Sundays.

This particular system is due to Mr. Charles E. Armstrong, of the American Telephone and Telegraph Company, and is in use for accounting by that continent-wide organization, in which time-calculations are, no doubt, an extremely important consideration. The larger the organization and the wider its ramifications the more it is affected by calendar complexities. Railways, with their fluctuating traffic depending on holidays and work-breaks, and insurance companies, with their period-measured policies, are examples that come easily to mind.

An interview by an American journalist, Mr. Jerome Schwartz, with an English railway executive recently visiting America is worth quoting for the British point of view.

"You want to discuss calendar reform," Mr. Schwartz quotes his visiting official as saying. "Well, speaking personally, I've been in favour of it for twenty-odd years, and my attitude is shared by a big majority of transportation executives in my country. As far back as 1921, we investigated this subject with a comprehensive questionnaire, and found that four-fifths of replies wanted an improved calendar.

"That's still the opinion of British railway men in the higher echelons. But it doesn't apply to the ranks. The great mass of transport men are uninformed and indifferent. Few of them are aware of the deficiencies of a calendar to which they have become accustomed by a lifetime of use. It takes a bit of thinking to understand what's wrong with the calendar. And how are you going to make people think? Simplification of the calendar is politically and economically logical, but the high value and importance of such a change in human life will not be appreciated by the mass of our people until it has been put into effect.

"You've got to have leadership. For many years, in the late thirties, the dynamic Lord Desborough kept the subject alive. Since his death there's been nobody of equal calibre to whip up enthusiasm in Britain. . . ."

The World Calendar, as it is called, is now the dominant scheme for simplifying and rationalizing our date-system.

A remarkable fact about this calendar is that the whole revolutionary change could be made with the alteration of numeration of only seven dates in a whole year, as when 29 and 30 February follow our ordinary 28 February. But for this to happen without dislocation or confusion, as it obviously could and should do, the new calendar would have to begin when 1 January falls ordinarily on a Sunday. The next time this will occur will be in 1956.

It is now 118 years since an Italian priest in 1834 first put forward the suggestion of a 364-day year with the 365th treated as an extra-calendrical day. As far back also as 1923 the League of Nations took up the question of reform at the prompting of the International Chamber of Commerce, and collected and collated an immense amount of information on the subject. A full-scale International Conference on Calendar Reform took place in Geneva in 1931, and discussion of all the various schemes went on for several years, while it became more and more obvious that The World Calendar might prove most practical and acceptable.

Next progressive action was in 1937

When the League invited its member nations to state formally their attitude to The World Calendar idea. Replies were mixed, but the outcome was that six governments rejected calendar reform; fourteen accepted The World Calendar draft; eight made no observations; ten were unprepared; seven considered the time premature.

Great Britain, it must regretfully be recorded, appeared in the last category, in spite of strong approval in high and influential places. The London Chamber of Commerce, for example, with its powerful membership in every industry, has been actively in favor of calendar reform since 1911, when its records show that at a meeting the Council of the Chamber expressed the opinion that "the Government should give its support to the proposals to establish, by international agreement, a Fixed International Calendar and a Fixed Date for Easter."

After many years the fixed date for Easter came to be embodied in the Easter Act 1928, an Act which is on the Statute Book, but held in suspense pending approval of the Church, but no official action has been taken in this country on reform in the wider sense since Admiral Beamish introduced the subject for debate in the House of Commons in March 1944, and the debate was cut short by the guillotine.

Now the matter rests with the United Nations. The World Calendar Association is campaigning hard to bring about universal adoption in 1956.

FOR THE SERVICE OF MAN

By Dr. L. E. C. Hughes, in the Bexhill (England) Observer

THERE are active groups all over the world who believe that the present calendar is due for a change. The matter is urgent because the soonest appropriate date for introducing the proposed perpetual calendar is 1 January in 1956. It will have to come through the United Nations, where a considerable opinion already favors this more scientific calendar, to be introduced for the service of man.

Some people seem confused about the seventh day of the week. It is quite simple. The week is man-made, and the original choice of seven days for a weekly cycle is based on reasons which are long forgotten. The year is obviously determined by the sun, the day by the turning of the earth, the month roughly by the moon. But there is nothing in nature to determine the week, much less its beginning and end. Man invented the calendar, and there were many confusing systems, some with ten days of the week, before Julius Caesar formed the present calendar of 12 months with an extra leap day every four years. It was founded on good astronomical knowledge, which got lost for a thousand years during the dark ages—otherwise we might by now have become properly civilized.

The proposed perpetual calendar involves an eight-day week every year and an extra one in leap years. There seems no doctrinal objection from the leading Christian churches, but surprisingly severe objection from certain Jewish groups. The strict Jew would insist that his Sabbath be moved back one day in the week each year, with an extra day back in leap years. Fortunately the Christian churches carry on their feasts without much regard to the civil calendar, and the Jews and Arabs have their own calendars also unrelated to the civil calendar. So perhaps these minor objections may be disregarded.

WE NEED A NEW SYSTEM

By Elisabeth Achelis
From Changing Times, the Kiplinger Magazine, January 1952

One of the important world centers of business information is the Kiplinger Building in Washington, D. C. The "Kiplinger Letter" is a weekly "must" for thousands of bankers, industrial leaders and professional men throughout the United States. Its tabloid appraisal of the American scene is supplemented monthly by the Kiplinger Magazine, now in its sixth year. The January issue devotes two pages of type and diagram to the need for calendar revision. The editor introduces the subject with the following comment: "On the soapbox this month is Elisabeth Achelis, president of The World Calendar Association, who says our present calendar is unbalanced, mixed-up and inefficient, and should be supplanted by a perpetual calendar."

OUR calendar is all mixed up. Nothing fits. Weekdays and month-dates play tag with each other, and no one year is like the previous or the next. Neither quarter-years nor half-years are comparable. The months have a bewildering variation in their number of days, ranging from seven months with 31 days each and four months with 30 days each to one lonely month of 28 or 29 days. Holidays are a bane; they are observed either on a fixed date, like Christmas on 25 December and Independence Day on 4 July, or on a fixed weekday, such as Labor Day on the first Monday in September and Thanksgiving on the fourth Thursday in November.

Thus many things are awry in our present unstable and chaotic calendar. It is like a jigsaw picture-puzzle wherein the pieces never fit—especially as the extra 365th day (52 seven-day weeks add up to only 364 days) throws the whole calendar out of kilter.

All this confusion and disorder in our basic time-measurement system takes a heavy toll from business, economic and social life.

In a recent pilot survey, which submitted a questionnaire to members of the Controllers Institute of America, 93.08 per cent of the 538 answers gave an unmistakable indication that a "perpetual calendar" is wanted. It would eliminate many present difficulties, the respondents agreed, and would make their statistics and accounting far more accurate and intelligible.

The importance of that opinion is indicated by the fact that the capitalization represented by the respondents who took the affirmative stand was more than 18½ billion dollars; by those who took the negative, less than 3 billion dollars. A typical comment: "There is no reason whatsoever why the business world and the public should continue to use this impractical, wholly uneconomical, chaotic and outmoded Gregorian calendar."

In these days when scientific accuracy, international harmony and human idealism are part of the world's armor against

confusion, discord and insecurity, it is our duty to find and adopt a stable and orderly calendar, wherein confusion gives way to order, discord to agreement, and insecurity to stability.

The World Calendar of 12 months and equal quarters brings this about. All the various time units agree within it. The days, weeks, months and quarter-years—the latter approximating the seasons—all coordinate naturally and easily at the beginning and ending of the quarter-years, which begin on a Sunday and end on a Saturday.

There is coordination within the perpetual World Calendar. The quarter-year has exactly 91 days or 13 weeks or 3 months, and the months each have their neat pattern of 31, 30 and 30 days, with each quarter repeating the same arrangement. Every month has the same number of weekdays, 26, plus Sundays. These harmoniously integrated time units retain their particular function and make their own contribution to the reckoning of time and avoid the sins of monotony and dullness. No one time unit is more important than the others. There is nothing monotonous in The World Calendar that contains the varying yet orderly three months in every quarter-year.

Ninety-one days, multiplied by four, gives a handy annual total of 364 days. But to establish The World Calendar on a scientific basis the 364-day year is not complete. The 365th day must still be taken into account if the calendar is to conform to the astronomical year.

This odd 365th day has always been the stumbling block among calendar reformers, but the Roman Catholic Abbé Mastrofini solved the problem. He recommended that the 365th day be considered as an extra day and placed between two weeks as a supplementary day belonging to the outgoing year. He called it an "eighth day" in the last week of the old year.

His ingenious idea was probably inspired by the extra 50th day of an old pentecontad calendar used by ancient Hebrew patriarchs. In their pentecontad system, as mentioned in the Old Testament, a 50th day, as a "special day," sealed a 49-day sequence of seven weeks with seven Sabbaths. There is certainly nothing new under the sun!

In The World Calendar the 365th day becomes a world holiday, a non-working day called Worldsday, dated either W or 31 December, and the calendar is complete, orderly and stable. Every new year begins on Sunday, 1 January, with Monday as the first business day in the new year. In leap years the Leapyear Day, another world holiday, is dated either W or 31 June. Both of these world holidays are dedicated to goodwill, cooperation and peace.

What will be the advantages with The World Calendar in use?

For business, a perpetual and comparable calendar—with weekdays falling on the same month-dates and all the different time units coordinating within each quarter-year and with stabilized holidays. That will permit more accurate planning and better record-keeping. It will lead to greater efficiency, convenience and economy. Bankers point out that all statistics and interest figures will be more easily computed under this orderly plan, and that transactions between lender and borrower will be on a truer and more equitable basis.

For labor, the time periods for work

will become accurate and unvarying. The pattern of weekdays and stabilized holidays, every year the same, will make workaday life easier, simpler, more predictable.

For transportation, schedules and planning will be simplified and improved. The program for one year can apply to following years. This also holds true in the vast field of education, where school and vacation schedules will become permanent, thus simplifying the complicated planning which now consumes much time, energy and material.

For government, many benefits. For example, its fiscal year will always begin on the same day and date, and years will be comparable. Customs receipts, taxes, and interest on government bonds can be better computed on the regular equal-quarter arrangement.

For housewives, home budgeting and planning will be simplified by this stable and harmonious calendar wherein everything fits.

The invariable order of the days and dates will become as familiar as the minutes and hours on the dial of the clock. In our personal lives, many benefits will accrue in the varied and numerous activities which occupy us all; our living will run more smoothly.

It is urgent that everybody push for action without delay, so that The World Calendar may be approved for adoption by the United Nations this year. Seventeen nations have already officially approved The World Calendar "in principle." Thus an international nucleus of acceptance on which to proceed has been formed.

The international program requires that the United Nations give formal approval, with official ratification by governments in 1953-4. This will leave the following years for the nations to prepare for the adoption of the new calendar on Sunday, 1 January 1956. On that day, date and year both the old Gregorian and the proposed World Calendars coincide, so that a smooth transition will be possible.

MORE ABOUT MONDAY HOLIDAYS

Charles H. Percy, president of the Bell and Howell Camera Company of Chicago, is conducting a campaign for eliminating mid-week holidays. His theory is that all such holidays should be moved automatically to the nearest Monday.

"In our organization," he says, "we have frequently acted arbitrarily, moving holidays to either Friday or Monday, so that our employees could have the advantage of a long week-end. This has proved administratively difficult, however, inasmuch as supplies continued to roll in, emergency shipments had to be made, phone calls poured in as usual, and the mail piled up.

"We are now surveying a number of companies, discussing the problem with business associations, and in a broad fundamental way, studying what may be done to correct our antiquated calendar."

The Chicago *Daily News* comments editorially: "Mr. Percy's idea should have widespread support. Only public apathy prevents its enactment. Nobody is against it, because the advantages are self-evident. It seems absurd that a system everyone grumbles about should continue to tryannize our lives simply because we are too lazy to change it."

CURRENT PRESS COMMENT

Time Marches On

The New York Times

ACCORDING to Professor John Duncan, Wellesley College astronomer, the length of the year, from one spring equinox to the next, is 365.24219 mean solar days. The decimal fraction has not been carried further than that, and it is suspected that, like the value of pi, it would never come out even. The difference of nearly .008 of a day between the length of a year originally assigned to it in Julius Caesar's leap-year rule and its real length means a difference of eight days in a thousand years, and was enough to bring about the reform of the calendar by Pope Gregory XIII.

Current complaints against the calendar are not against its mathematical accuracy but its disorderly arrangement of the months. The World Calendar aims at four equal quarters of 91 days each, with an additional day to make up the full length of the year and, of course, an extra day in leap year.

When the Russians adopted the Gregorian calendar in 1918, they worked out a very complicated scheme to keep it from falling into error on the length of the year. Their calendar, however, will march along with ours until the year 2800, when there will be one day's difference—that will be a leap year in our calendar and an ordinary year in Russia. To reach an agreement with the Russians on any point takes time, but perhaps over the next 848 years this small difference can be adjusted.

Reform is Needed

Thomasville (Ga.) Times Enterprise

ONE World Calendar for one world—is the slogan on which The World Calendar is making a continuous and persistent plea for the reform of the present calendar. The reasons for the change are numerous. A presentation of the plan has been given to all sections of the world and widespread interest has been created in the general idea, especially in the Latin-American countries.

The reform is needed, and we can readily see that there are many advantages in the scheme, provided it is universally and simultaneously adopted. Study of the proposal is being made in many nations, but it is hard to overcome the psychology of lethargy. We believe that this program should be taken up officially by the larger nations, whose approval would induce the rest to adopt it as a world-wide system.

Because of England's refusal to recognize the Gregorian calendar, an old legend goes by the board—namely that Shakespeare and Cervantes died the same day, 23 April 1616. Actually Cervantes passed away "New Style" in Spain, Shakespeare 11 days later but the same date by the Old Style Calendar.

Strangely Disinterested

Chambersburg (Pa.) Public Opinion

SEVENTEEN governments have approved The World Calendar, but the United States seems strangely disinterested. Now that the United Nations has assumed the leadership for a better calendar, the movement should gain impetus, for the UN provides a forum where the pros and cons of the question can be debated by responsible leaders under favorable circumstances.

Calendar revision along the lines of the proposed World Calendar is so clearly in the interest of uniformity and suggests such simplification of business, professional and agricultural operations and record-keeping that it is a wonder it has not been adopted long ago.

RECENT CALENDAR RESEARCH

Important Bi-Centenary

By Earl Hall
(Editor, Mason City, Iowa, Globe-Gazette)

THIS year marks the 200th birthday of our calendar, so far as the English-speaking world is concerned. By act of Parliament, Britain and her American colonies just two centuries ago embraced the Gregorian method of time reckoning.

The reform inherent in that calendar, initiated by Pope Gregory XIII in 1582, had been adopted by a majority of European nations years before. But not by the conservative British. For 170 years they continued out of step with Europe until at long last they yielded to inexorable scientific facts and practical needs. What this belated action meant, of course, was that 11 days had to be dropped out of 1752.

This caused some curious complications in English and American chronology. George Washington, who was just reaching man's estate at that time, had to change birthdays. Born on 11 February 1731 under the old calendar, he was forced to switch his birthdate to 22 February 1732. He had the unusual experience throughout his lifetime of observing two birthdays. Virginia neighbors honored him on 11 February, but elsewhere 22 February was observed.

At the present time, as nearly everybody knows, there's a plan available which puts order and sense into our calendar. It divides the year into quarters of equal length. Fixed holidays are always on the same date and weekday. It's called The World Calendar. Why isn't such a logical plan immediately embraced by a forward-looking world?

That, for Americans, is an extremely embarrassing question. By a curious and lamentable coincidence the English-speaking world is again laggard. Neither England nor America has as yet registered approval of the proposed change at the United Nations, although 17 other nations are supporting it. The State Department in Washington says it has not sufficient "popular mandate" and cannot take a favorable position until Congress directs.

This seems an unnecessarily negative attitude, in view of the fact that the proposed new calendar has been endorsed by numerous civilian bodies.

The 200th anniversary of the calendar is especially significant, because it marks a peak effort in the United Nations for a revised calendar. The current proposal is for approval of The World Calendar by the UN in 1952, with a view to installing the new system internationally in 1956.

The State Department is asking for a mandate from Congress. Congress no doubt is asking for a mandate from the public—which means you and your neighbors. That should give you an idea of doing something about this long overdue item of progress.

Egypt's Perfect Calendar

By O. Neugebauer
Professor of Science at Brown University

(From his recent book, The Exact Sciences in Antiquity)

OF all the civilizations of antiquity, the Egyptian seems to me to have been the most pleasant. The excellent protection which desert and sea provide for the Nile valley prevented the excessive development of the spirit of heroism which must often have made life in Greece hell on earth. There is probably no other country in the ancient world where cultivated life could be maintained through so many centuries in peace and security.

Mathematics and astronomy played a uniformly insignificant role in all periods of Egyptian history. The mathematical requirements for even the most developed eco-

nomic structures of antiquity can be satisfied with elementary household arithmetic, which no mathematician would call mathematics. The development of astronomy was relegated to the status of an auxiliary tool when its theoretical aspects were dominated by their astrological interpretation. The only practical applications of theoretical astronomy may be found in the theory of sundials and of mathematical geography. There is no trace of any use of spherical astronomy for a theory of navigation.

Egyptian astronomy remained through all its history on an exceedingly crude level which had practically no relation to the rapidly growing mathematical astronomy of the Hellenistic age. Only on one point does the Egyptian tradition show a very beneficial influence: that is in the use of the Egyptian calendar by the Hellenistic astronomers.

This calendar is, indeed, the only intelligent calendar which ever existed in human history. It consists of 12 months of 30 days each and 5 additional days at the end of each year.

Though this calendar originated on purely practical grounds, with no relation to astronomical problems, its value for astronomical calculations was recognized by the Hellenistic astronomers. Indeed a fixed time scale without any intercalations whatsoever was exactly what was needed for astronomical calculations. The strictly lunar calendar of the Babylonians, with its dependence on all the complicated variations of the lunar motion, as well as the chaotic Greek calendars, depending not only on the moon but also on local politics for intercalation, were obviously far inferior to the invariable Egyptian calendar. It is a serious problem to determine the number of days between two given Babylonian or Greek new year's days, say, 50 years apart. In Egypt this interval is simply 50 times 365. No wonder the Egyptian calendar became the standard astronomical system of reference which was kept alive through the Middle Ages and was still used by Copernicus.

A second Egyptian contribution to civilization is the 12-division of daytime and night, still used in our present system. It is an open question, however, when and to what extent these hours were made of equal length. The ordinary rule was certainly the use of "seasonal" hours, whose length is the 12th part of the time from sunrise to sunset and from sunset to sunrise respectively. The theory of the relationship of these seasonal hours, whose length depends on the time of year and the geographical latitude, to the equinoctial hours forms an important chapter in ancient astronomy. The seasonal hours disappeared only with the invention of mechanical clocks in modern times.

Industrious Ben Franklin

By Jack Mackay
(In Paterson, N. J., News)

BEHIND the calendar of today lie centuries of research, confusion, adventure and romance, all occasioned by man's ceaseless efforts to nail down time to an accurate schedule of measurement.

The year 1952 marks the 200th anniversary of the calendar as it is known and used in America today. It was in 1752 that the English-speaking world finally decided to get in step with nearly everyone else by adopting the Gregorian system.

Special note of the bi-centenary is being taken by Brown and Bigelow, world's largest calendar printers. Their official house calendar this year bears the picture of Benjamin Franklin, whose name is synonymous with the early development of the calendar industry in America. His *Poor Richard's Almanac* was a standard in all colonial offices, homes and public places.

When the September 1752 change was ordered in the calendar, with the dropping of eleven days, it was no easy task for a busy English-speaking world to absorb the dramatic revision. Franklin did not allow the change to pass unnoticed. He devoted most of his 1752 edition to it, tracing the development of calendars, the various ways man had tried to measure time, and reasons for the sudden switch to a new system.

FROM THE MAIL BAG

From many points of view, The World Calendar would have great advantages. Statistics, figuring of pay rolls and economic as well as governmental decisions would be facilitated considerably. Traffic would also derive advantages from this arrangement, particularly the drawing up of timetables. Also sports, vacations and numerous other facets of life would reflect the benefits of such a new calendar everywhere.—Dr. Ferdinand Haerecke, International Chamber of Commerce, Cologne/Rh.

The whole idea of The World Calendar is terrific. I shall do my part in teaching and promoting the idea, and I am also writing my Congressman and Senators urging them to act.—Frank Sheldon, Teacher, Richmond, Va.

Advocates of Esperanto will not fail to take notice of the movement for calendar reform. We find the proposed revision an improved instrument, and we shall not delay to lend a hand toward its adoption.—T. Yelland, Aspremont, France.

We have presented an article on The World Calendar to our readers in the hope it will provoke thought and discussion as well as familiarize them with the subject.—Margaret Pouder, Editor, *Tennessee Planner*, Nashville, Tenn.

Ever since I first became acquainted with the movement for an improved calendar, I have had admiration and sympathy for this cause. I desire to offer my modest contribution to your disinterested and laudable work.—Prof. Milan St. Duricza, Grand Halleux, Belgium.

It has been my policy for several years to present the facts about the calendar and the advantages of The World Calendar to several hundred students in my science classes, where I conduct a required course in science orientation.—Dr. Willis Bray, State Teachers College, Kirksville, Mo.

It is inspiring to know of the untiring efforts of The World Calendar Association to promote the study of our relatively inefficient and inadequate calendar. I am glad to be identified as one of its active supporters.—Frederico Sioson, Weather Bureau, Quezon City, Philippines.

After hearing a lecture at Franklin Institute, I was much impressed by the practicability of The World Calendar. At the college we all agree it would be a wise step toward world unity.—Wm. H. Girton, Houghton College, Houghton, N. Y.

How much time is wasted annually in the study of calendars and almanacs, in the effort to keep track of the ever-changing connection between month-dates and weekdays? It is strange that people who in other respects insist upon an ever-increasing exactness in measurements seem to be content with a time-reckoning which is irrational and unsymmetrical.—E. B. Traneus, Science Editor, Stockholm, Sweden.

Improvement of the calendar is a most timely forward step in this world of progress.—Alton Andrews, Williamsport, Ind.

Up here in Alaska, most people I have spoken to about The World Calendar have never even heard of it! Public opinion in favor of the plan is needed for putting it over.—Rev. James Conwell, S.J., Fairbanks, Alaska.

For several years I have been wholly in accord with calendar reform proposals. In fact, I often think, what are we waiting for? —Col. C. I. Kephart, Shady Side, Md.

As regional World Outlook Director for the YMCA in Nova Scotia, New Brunswick and Prince Edward Island, I am endeavoring to gain support for The World Calendar in this area.—L. B. Smith, Woodstock, N. B.

It is my opinion that the simplicity of The World Calendar is one of its greatest merits. —Prof. Ernest Sutton, Amsterdam, O.

This campaign for an improved calendar is one of the most worth-while movements in the world today.—Richard Chase, Science Teacher, Schenevus, N. Y.

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EDITORIAL PARAGRAPHS

Opposition to calendar reform comes largely from people who prefer to live in the past. They say: "Since our present calendar has served the world for a long time, why change it?" These good folk, to be consistent, should never travel by train, auto or airplane. If Julius Caesar had felt that way, we would still be using a lunar calendar with all its weird bewilderments.—*Reveil, Grenoble.*

We all have to consult a printed calendar every time we make an appointment. That's because we can't tell, without its help, whether a coming date is going to occur on Saturday, Sunday or some other convenient or inconvenient time. It would be nice if we could know these things without all such bother. It would be nice if the annual calendar were invariable, with every year the same.—*Erie (Pa.) Times.*

Certainly the Gregorian calendar has reached a venerable age, but it is not logical in any respect.—*Vaterland, Amsterdam.*

Revising the calendar is an ambitious undertaking, and in 2,000 years only two world leaders accomplished it. Now, however, The World Calendar Association is engaged in the task. How much longer, it asks, will people tolerate the present absurd and unreasonable calendar? But even if the new calendar is adopted, we are inclined to the opinoin that there will remain considerable disorder in human affairs.—*Easton (Pa.) Express.*

Most nations agree in principle that calendar reform is a grand idea. There is not one really convincing argument against the new system.—*News, Manchester, England.*

Benefits that would accrue from calendar revision would be considerable. What we're doing is trying to run a streamlined civilization on a calendar that dates back to Julius Caesar, 2,000 years ago.—*Albany (N.Y.) Knickerbocker News.*

This movement for a World Calendar has an importance beyond the calendar itself. The world needs an international sense—a common sense—that will draw together leaders and peoples.—*Ottawa Citizen.*

From the time primitive man learned to use numbers and figures, finding that his fingers and toes constituted a wonderful abacus or calculating machine, he began making improvements in his methods of keeping time. We are still at it, and The World Calendar is the answer to those who wish to improve the present system.—*Summit (N.J.) Herald.*

While the Gregorian reform was a notable achievement, it did not eliminate all the inconveniences and inefficiencies from the calendar.—*Popolo, Turin, Italy.*

A new streamlined calendar to serve our streamlined world is needed to replace the chariot system of reckoning time we use today.—*Greenwich (Conn.) Time.*

Adoption of the proposed new calendar has the merit of efficiency and economy, and will make statistical comparison much simpler.—*Shimbun, Tokyo.*

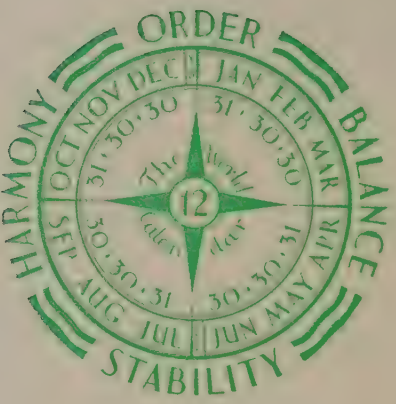
Everybody will profit from calendar reform because of the simplification it will bring to business, labor, industry and science.—*Mamaroneck (N.Y.) Times.*

That the calendar needs revising must be obvious to anybody who reads the papers.—*Echo, Cork, Ireland.*

Our government should join in endorsing one calendar for one world. The United States, England and France should take the lead.—*Whittier (Cal.) News.*

Crusade to change the calendar is still going on. As a cause, it sounds so sensible and so right that we are climbing on The World Calendar bandwagon.—*Southington (Conn.) Herald.*

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



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Journal of CALENDAR REFORM

ACTION BY NEHRU IN INDIA

Pages 98 and 103

September 1952

THE WORLD CALENDAR

1ST QUARTER

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3RD QUARTER

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Worldsday, (a World Holiday), W or 31 December (365th day), follows 30 December every year.
The Leapyear Day, (another World Holiday), W or 31 June follows 30 June in leap years.

In this Improved Calendar:

- Every year is the same.
- The quarters are equal: each quarter has exactly 91 days, 13 weeks or 3 months; the four quarters are identical in form.
- Each month has 26 weekdays, plus Sundays.
- Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.
- Each quarter begins on Sunday, ends on Saturday.
- The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.

ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXII SEPTEMBER 1952 No. 3

LORD MERTHYR, one of the most broad-minded and forward-looking members of the British Parliament, has for many years been a staunch advocate of calendar reform. When his government postponed consideration of the subject on the ground that it had "no popular mandate," he wrote: "I urge that it is the duty of all governments to make changes that are obviously beneficial to their people. We must fight to get around the pernicious doctrine that because there is not a loud demand for reform in this country nothing should be done. This dangerous doctrine is, I am afraid, all too common."

The same "pernicious doctrine" is also prevalent in the United States, and in other countries as well. The State Department has repeatedly used it to brush off advocates of calendar revision. Yet the study of American history shows how frequently great and beneficial changes have been made without a popular mandate.

The adoption of Standard Time is a pertinent example of a reform which would never have arrived if it had waited for a popular mandate. It was brought about by a comparatively small group of alert citizens, the American railroad men, who joined their Canadian colleagues in initiating Standard Time. Their action had no popular mandate; in fact it was strongly opposed by certain groups and even by portions of the popular press. But the railroad men felt acutely the need of correcting a confused and unmanageable system of conflicting local time standards; they took the necessary measures, even in the face of opposition from minor religious groups who resented "interference with God's time." A small but courageous group of men had the vision and determination to act—and they won. It was a victory which brought vast advantages to the world, facilitating the rapid expansion of international communication and understanding.

The similarity between Standard Time and calendar reform is apparent. Adoption of The World Calendar is another important forward step in easing the pathway toward smoother world relationship.

It takes no special study to see how deeply calendar irregularities affect everybody, everywhere. The present calendar is a disguised thief that robs all human beings

of time, effort, material and money. Lord Merthyr is merely stating an axiomatic fact when he asserts that it has become mandatory upon governments throughout the world to stop such wholesale and subtle thievery.

An American business man who has specialized in the intricate field of cost accounting estimates that the improved calendar will enable American business men to "effect annual savings sufficient to pay the interest on the national debt." Here is a change, he says, "so profitable and beneficial to all classes of our people that further postponement of it seems ridiculous." In a study of the financial structure of a selected group of great American corporations, 86 per cent of the companies complained of calendar difficulties, while 94 per cent were sure a stabilized calendar would give increased efficiency to their operations. If this is the situation in the United States, it may be assumed that similar situations exist in other countries.

Is it then just and fair for government officials to demand a "popular mandate" to proceed with this urgent matter? Was there any popular mandate preceding the signing of the Declaration of Independence, or the formulation of the Constitution of the United States? Even the American Revolution required the courage of leadership, in a situation where—as John Adams wrote—only about one-third of the colonists were for it, a third being against it, and the remaining third utterly indifferent.

Calendar revision is international. The World Calendar will triumph, and bring to the world a much-needed new freedom and order in the annual reckoning of Time. Upon the United Nations rests the responsibility—to say When. With vision and courage to act with determination, the new perpetual civil calendar will be adopted and in force by the year 1956.

NEWS BULLETINS

NEW DELHI.—Prime Minister Nehru has appointed a "Calendar Reform Committee" to study the whole complicated question of the need for an Indian National Calendar. The committee includes the Minister of Education, Dr. Maulana Abul Kalam Azad, and the distinguished scientist, Professor M. N. Saha of the Institute of Nuclear Physics, together with several other important public men representing a wide variety of interests. Both Dr. Azad and Professor Saha are well-known supporters of The World Calendar. Dr. Azad wrote a statement some time ago in which he said: "Calendar reform will mark a further step towards the unification of the world, which seems so necessary for the unification of mankind. The sooner the new calendar comes into force the better." Professor Saha's views are expressed in a current scientific publication which sums them up as follows: "As we study this important project, it is clear we should use as our basis the proposals which have been internationally advanced by The World Calendar Association."

LONDON.—On 13 September the *London Times* featured the 200th birthday of the Gregorian calendar by printing a picture showing how one London Newspaper of two centuries ago met the problem of the 11 days which were dropped. The *General Evening Post's* dateline read "from Tuesday, September 1 to Thursday, September 14, New Style, 1752." The *Post* explained the terms of the act in great detail. All contracts, wages and salaries were to run their full natural course. Although birthdays apparently came 11 days sooner, a young man still had to wait 21 full years to come into his inheritance. The men who put through the reform in Britain were the enlightened Whig aristocrats, under the leadership of Lord Chesterfield.

Journal of

CALENDAR REFORM

SEPTEMBER 1952

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GREGORIAN BI-CENTENARY

By Adelaide Kerr, Associated Press Feature Writer

ELEVEN days vanished forever just 200 years ago—and the event touched off reverberations which still echo in your life. It happened when Great Britain and all her colonies—the future U.S.A. included—switched from the calendar devised by Julius Caesar to the one originated 170 years before 1752 by Pope Gregory XIII.

September, 1752, had moved along quietly for two full days. But when folks woke up the next morning, it wasn't 3 September, but 14 September. Pandemonium resulted, even though British business men had been finding it increasingly difficult to get things done efficiently with the rest of the Western world because most of the rest of Europe had given up the Julian schedule in favor of the Gregorian long before 1752.

That didn't help the man-in-the-street. Big shots—and little shots—thought they had lost their birthdays. Some people thought their lives had been shortened. Others fought over payment dates of wages and the interest on mortgages and bonds. Landlords and tenants battled over when the rent fell due. Angry mobs poured into London streets shouting: "Give us back our 11 days."

In time, things simmered down. Some of the American Colonies clung to the old Julian calendar for years, with resulting confusion. Eventually, the Gregorian calendar came into general use in the United States, although there is no known accurate historical record of its official adoption by the various members of the 13 Colonies. To this day confusion reigns about certain dates that loom large in American history.

For ten centuries the first of the year was observed on varying dates in different countries. Gregory restored the New Year date to 1 January. In England after the 12th Century, the year began 25 March. So the calendar switch affected all historical dates between 1 January and 24 March, from 1582 to 1752. How to record the birthdates of George Washington, Benjamin Franklin and William Penn—and even the date the Pilgrims landed on Plymouth Rock—are still matters for argument. George Washington settled his immediate problem by celebrating two birthdays.

Back in 45 B.C., when Julius Caesar wanted to change the old Roman calendar (which had only 355 days in the year), he added a leap year every fourth year. This proved to be several minutes too much. After 1,600 years the calendar was about two weeks at variance with the seasons.

This affected the date of Easter, and the Church became interested. In time, Pope Gregory XIII called a commission to design a new calendar, which was launched in 1582 with two important changes.

First, the leap-year rule was changed, so that there would be 97 instead of 100 leap years every 400 years. (Century years not divisible by 400 are not leap years.) Under this rule, the average length of the year is only 26 seconds too long, and it will take the calendar 3,323 years to accumulate an error of one day.

The second change the Gregorian calendar made was to drop 10 days in October in order to bring the beginning of spring back to its traditional spot on the calendar.

A 13-month calendar was suggested about 100 years ago by Auguste Comte, French philosopher. In it, all months would be alike and (according to a subsequent suggestion), the extra day would be put at the end of the year. This calendar was never used. Some opposed it on the grounds of too-drastic change.

The World Calendar Association today has different ideas which could iron out difficulties with less change. The Association is working for adoption of a new world-wide calendar on 1 January 1956, when the change could be made smoothly. It would make every year the same, and would give all quarters the same form and the same length of 91 days. A one-day, year-end holiday would end each year, and Leapyear Day would fall between 30 June and 1 July. Seventeen countries have thus far signified their willingness to adopt it.

QUESTION OF TIMING OR TACTICS

By James Avery Joyce

On his sixth visit to the United States, the Honorary Secretary of the British Affiliate of The World Calendar Association is spending several months lecturing, studying and participating in international affairs. Mr. Joyce is a Barrister-at-Law of the Inner Temple, specializing in constitutional and international law. At the last British election, he contested Oldham (East), a textile town, and he is now Labour parliamentary candidate for the Lambeth (Norwood) division in London. His latest book, "Justice at Work," is being enthusiastically reviewed in the British press. A forthcoming book from his pen on international affairs will be issued early in 1953 by an American publisher, entitled: "World in the Making."

IT is too early, at the time this *Journal* goes to press, to summarize adequately my conclusions after a week or two in New York, spent in informal conversations with some of the United Nations delegates and other individuals concerned with calendar reform. But these first impressions may be of some value as indicating the general direction which calendar revision may be expected to take in the near future. if all goes well.

The factor which has, again and again, been stressed in this *Journal* is—"WHEN?" A great deal of thought has—quite rightly—been given by leading exponents of The World Calendar as to the wise *timing* of the various steps needed to bring a program of revision onto the governmental level and before the United Nations. This factor still remains important. The crucial date, Sunday, 1 January 1956, looms



Officers of the new British Affiliate: *Lord Merthyr, Chairman; Mr. Joyce, Honorary Secretary; Sir Harold Spencer-Jones, Astronomer Royal, Member Advisory Committee.*

ahead like a lodestar. The prow of the ship, at this stage of our journey, must be ever directed toward it. But timing involves *tactics;* and the immediate question is—"HOW?"

* * *

Quite frankly, the several discussions I have been able to carry on while in New York at this time have left me immensely encouraged. I feel we are reaching a crucial point in our campaign when, either by accident or design, we shall shortly find a way of breaking through the lethargy and inertia which have blocked the path of the movement ever since the days of the League of Nations.

To be concrete, the road now seems clear for specific steps to be taken, through the United Nations normal procedure, so that calendar reform may appear on the agenda either of the ECOSOC meetings in February (New York) or June (Europe) or, failing that, of the United Nations General Assembly next fall.

Is this a measure of undue optimism? What evidence is there to support such a view?

Firstly, it has been a matter of a growing surprise to me that so many individuals of prominence and distinction in their national communities have not only themselves accepted, intellectually, the general principle of The World Calendar, but they have, over the last few years, discussed and pressed for this reform among many of their official colleagues and associates. I understand that very rarely indeed have these many anonymous partners of ours, behind the governments, met with serious opposition within their own nations.

Moreover, it seems everywhere to be taken for granted that the change must take place *internationally* and through the existing machinery of the United Nations. Thus, The World Calendar Association, together with its Affiliates in over a score of countries, is doing *its* share to make the United Nations a more effective instrument of world cooperation.

Speaking personally, I had no idea, before I pursued these enquiries in New York, that calendar reform had made so much headway among people who "count" in the international field. It would be invidious, of course, to single out particular countries or individuals who have evinced the most lively interest in getting things done; but past issues of the *Journal* will fully bear out that discovery. It is, to say the least, of no little importance to the recently-formed British Section of the Association, to know that there exists this widespread understanding of the problem and this "solid" potential backing for any international action which may be taken in the immediate future.

* * *

Secondly, this *permanent* interest in getting something done is fortified by an immense amount of factual material, which was not available—or easily available—in the inter-war years. I hardly need record the fact that a good proportion of this abundant material has emerged from the activities of the Association. But it is significant that, especially through its quarterly *Journal*, the Association has by this

date explored almost every aspect of the subject and has dealt with, one by one, every major obstacle or objection that can be advanced against The World Calendar. As a result of this "Grand Debate," as it were, which has now been proceeding for many years, there hardly seems to be left a single reasoned argument against the change, which has not been thoroughly explored and decisively answered.

Consequently, much or most of the arduous preliminary work of research and analysis, which must always precede any substantial and lasting social change, has now been successfully completed—or almost so. There is, therefore, ready and available for the United Nations—in addition to the considerable labors of the old League of Nations—a completely documented "brief" for the guidance and stimulation of the advocates of the case when it actually comes before the bar of the United Nations. That is, indeed, an encouraging situation.

* * *

Thirdly, it is my personal conviction that the opposition to calendar reform, where it exists—above all, in comparison with the weighty support evidenced above—is fragmentary and trivial. In this short review nothing would be gained in attempting to detail the kind of opposition which is likely to be aroused as the campaign moves into its next phase.

Without necessarily speaking for the Association, my enquiries show that the "opposition" is, for the most part, confined to one or two unorganized and unorganizable groups of a distinctly violent and hysterical disposition, who have taken it upon themselves to resist this most sensible and necessary change by propositions and arguments which the average college boy could answer in five minutes.

Certainly, the citizen of a country which has, in recent years, carried through immense social and economic changes which have benefited the lives of millions—through popular and democratic procedures, and, sometimes, against virulent vested interests—is not going to submit to the dictation of a tiny and obscurantist minority in one or two corners of the earth. These scattered guerrilla forces against a rational calendar cannot, in the long run (as the great Gladstone once declared), impede or disturb those great forces of human progress "which ever move on in their might and majesty."

Calendar reformers—like all reformers from times immemorial—are sometimes referred to as "cranks." But, after looking carefully at some of the arguments put out by one or the other of these maladjusted dissident factions, I have no hesitation in describing them as "cranky" as anything else I have seen, either in my capacity of practicing lawyer—and lawyers have to deal with pretty queer people at times!—or as a life-long internationalist who, in the course of countless conferences and committees, has probably met every variety of scheme advocated by every species of human enthusiast.

Without giving further publicity, therefore, to any of these wild and fanciful theories as to why our chaotic calendar should *not* be changed, I would venture to suggest that the out-and-out opponents of The World Calendar take their stand, almost without exception, on a purely emotional foundation which belongs to the

primeval stage of human development and has no fit place in the Twentieth Century.

In my humble opinion, there is not the ghost of a future in the kind of attitude to human affairs which is exhibited—however sincerely—by those who are seeking to place trip-lines across the path of calendar reform. Contrasted to the rational and practically-minded proposals which the Association has pursued over many years of dedicated and consistent service to a great ideal of human unity and public welfare, the weird sophisms of its handful of detractors may be classified along with witches' brew and the totem-pole.

* * *

But, to conclude this survey on a more constructive note, I further believe that opportunities will present themselves during either the autumn or February meetings of the Economic and Social Council for the subject to reach open discussion on the inter-governmental level. There is nothing to prevent one or more of the UN delegations—on whose past consistent support we have been able to rely—from arranging, either severally or jointly, for the question to be placed on the appropriate agenda. In that event, it is presumed that the Secretary-General would be instructed to lay before either the ECOSOC meetings in New York, or its meeting in Geneva next June, some kind of factual report summarizing the studies which have already been undertaken under both the League of Nations and the UN. The Economic and Social Council will then be in a position to give preliminary consideration to the merits of the case and, if things go well, make some specific recommendations to the United Nations Assembly next fall.

In short, there is nothing on earth to hinder the United Nations from doing its proper work of studying and reporting on a matter of undoubted international concern affecting the mutual peace and prosperity of all peoples—*provided the matter can be officially brought to the attention of the Secretary-General in the normal course of his duties.*

If the great United Nations, with its imposing machinery of administration, finance, personnel and world-wide consultation, cannot undertake so humane and non-political an activity as this—to which so much research and discussion has already been devoted by its predecessor in Geneva—one may well be entitled to ask: "For what purpose, then, *does* the United Nations exist?" If those famous words: *"We, the people,"* have any meaning as the *raison d'être* of the United Nations, then surely a matter of such obvious social significance as improving the common time unit of mankind is something which the United Nations cannot, without injury to itself, ignore or neglect.

What is clearly at stake is not so much the pros and cons of a better calendar, but the right of a substantial international movement—in which I include all leaders of thought and action who want calendar reform and not merely the field workers of the Association—to use effectively the instrument which "We, the people" have set up for precisely this kind of peaceful and creative activity.

It is not calendar reform which is on its trial; but the United Nations.

APPEAL to PARLIAMENTARIANS

In an effort to organize official support for calendar reform, a formal "Appeal to Parliamentarians of the British Commonwealth" is being circulated to members of the House of Commons and the House of Lords. The same appeal will also go to members of the parliaments of Canada, South Africa, Australia, New Zealand and other units of the Commonwealth. The Appeal has the backing of the newly organized British Section of The World Calendar Association, and also of the Canadian Affiliate. A similar movement is underway in France, Sweden, Norway, Switzerland and Belgium.

DEFECTS of the present calendar are more and more evident, and the movement for revision constantly gains momentum. The current proposal for calendar reform is simple and practical. Seventeen governments have given The World Calendar approval: Afghanistan, Brazil, Chile, China, Czechoslovakia, Esthonia, Greece, Hungary, Mexico, Norway, Panama, Peru, Saudi Arabia, Spain, Syria, Turkey, Uruguay. Most of these seventeen governments stated their position as early as 1937, when they officially replied to an inquiry from the League of Nations. Since then they have been an effective nucleus of support for rationalization of the world's system of time measurement.

It is noticeable that the list of seventeen nations does not include any of the English-speaking countries. The latter have been backward in supporting calendar revision. There appears to be a need for a more insistent public demand and a more active leadership which will arouse the governments of the Great Powers to change their apathetic attitude.

In the economic, industrial and social fields there is a growing awareness of the inadequacy of the present calendar, with its annoying irregularities. Those who must constantly deal with accurate calculations, important engagements and future planning find these matters hindered by the use of an exceedingly antiquated calendar. With closer inter-communication between nations, and with the wide demand for greater world cooperation, it becomes clear that the inconvenient calendar brings hardship.

The inequalities of the quarter and half-year divisions, and the annual differences between the weekday arrangement of the same months, are matters which call for adjustment. In a world which must guide itself increasingly by accurate comparison, the erratic calendar is the cause of errors which, in sum total, are costly and unnecessary. Its many inconsistencies draw heavily upon man's time, effort, labor and money.

The purpose of calendar reform is to regularize and stabilize our time-system, so that it will adequately meet modern conditions. The proposed reform responds impartially to the needs of industry, government, agriculture, science, religion, social

life, education and all other phases of activity. It has long been the subject of international conference and study.

It is now generally agreed that the most satisfactory and simple plan of revision is that known as The World Calendar. This proposal rearranges the lengths of the familiar 12 months, equalizes the quarters and makes the calendar perpetual, every year the same. Equalization of the quarters is accomplished by giving the first month of every quarter 31 days and each of the remaining two months 30 days. Thus the 12-month year has four months of 31 days and eight months of 30 days. Every month has exactly 26 weekdays, plus Sundays. This improved civil calendar can be achieved without difficult transitional changes.

Other proposals have been put forward, but all of them contain insurmountable difficulties. A decimal system has been proposed, but the solar year with its 365 days is not well adapted to divisions of ten. A 13-month calendar has its advocates, but the use of a prime and indivisible number like 13 is awkward; and the introduction of an additional month "Sol" does not make for simplicity or convenience. Another proposal, equally complicated, suggests a "leap week" calendar with long and short years. All three proposals are theoretical, not practical.

Taking the solar year of 365.2422 days as the principal unit of time, this plan apportions the various subdivisions of the year so that they are easily divisible and readily coordinated. It divides the 12 months into equal quarters of 91 days, 13 weeks or 3 months, making a total of 364 days. Then, to complete the year and to achieve a calendar unchangeable from year to year, the 365th day is added as a world holiday—the new Worldsday—on W December or 31 December, after Saturday, 30 December. It is the closing day of the year. This "extra day" is a device suggested by the ancient Israelite pentecontad calendar which added a 50th day after each cycle of seven weeks or 49 days.

Under the new civil calendar, New Year's Day will always be Sunday, Christmas will always come on Monday. In leap years, the extra 366th day will be added at the end of the first half-year, as W June or 31 June, another world holiday.

Equalization of the quarter-years makes simple and comparable all quarterly and half-yearly computations, statistics and accounting. Within the equalized quarters, coordination is secured among the various time-units, such as the day, week, month and season. This complete agreement, four times a year, facilitates the assembling, studying, analyzing, planning and comparing of reports, records, budgets and other data. Days and dates always agree and holidays are fixed.

The World Calendar, by retaining the familiar and extraordinarily convenient 12 months, makes a year which is more accurately divisible into 2, 3, 4 or 6 parts.

Dates in this calendar are so close to the Gregorian (there is a nominal variation of not more than two days) that comparison of data with previous years is still practical and easy. This plan of revision accomplishes all the necessary improvements without upheaval. The changes are few and easily made. They can be put into effect almost without being felt and without disturbing historical dates and anniversaries.

There exists no national prejudice, no special interest, and no political bias against calendar revision. There is no justifiable reason that nations and peoples cannot unite in its accomplishment. The World Calendar is universal in scope, character and action, and can exercise a world-wide influence towards international cooperation and world peace.

The next convenient date to put The World Calendar into operation is Sunday, 1 January 1956, when both the present and the proposed new calendars agree. The United Nations is the international body through which The World Calendar can receive world-wide approval. In order to achieve this much-desired goal it is necessary that member governments approve the revision within the United Nations and their legislative bodies make this action effective.

Of special importance for this procedure through the U.N. are the years 1952 and 1953, allowing two preparatory years towards putting the new civil calendar into operation on Sunday, 1 January 1956.

WIDESPREAD SUPPORT IN THE UNITED KINGDOM

Advantages of this reformed calendar, combined with a fixed Easter, would undoubtedly be considerable, in business and to the community at large. Many of the foremost astronomers in all countries favour The World Calendar. I am strongly in favour of this plan.—Sir H. Spencer-Jones, Astronomer Royal.

Why the delay in adopting such a meritorious reform? The answer to this pertinent question is summed up mainly in one word—inertia. It is a curious fact that there is a strong instinct in man to prefer darkness to light.—A. Ruth Fry, London.

Eighty British business men attended a discussion of calendar reform at Southend on 5 July. The World Calendar seemed to them such an obvious improvement on the present system that it is not easy to understand how any intelligent person could do anything but approve.—Rev. W. Stanhope-Lovell, Westcliff-on-Sea.

There is no rational argument whatsoever against calendar reform. — Sir Richard Acland, M.P.

As a scholar ignorant of the particular problems involved, but gifted with a certain modicum of common sense and possessing a very sincere desire to see solid progress in at least one department of life in this disintegrating world of ours, I desire to place on record my enthusiastic support of your proposals. — Sir Alan Gardiner, F.B.A., Oxford.

There is an actual day-to-day need for a more efficient and stream-lined calendar. Today the Western World — operating through its business and industrial organizations, banks, trade unions and governments—is losing patience with its imperfect calendar. It is wasting millions of pounds every year on retaining such an inefficient device.—Lancelot Hogben, F.R.S.

INDIA'S CALENDAR CONFUSIONS

By Professor M. N. Saha, F.R.S.
President of the Astronomical and Astrophysical Society of India

OLDEST of astronomical problems is the calendar. Here indeed we have an indispensable requisite of civilized life, and the difficulties of working out a satisfactory time system are as ancient as the dawn of civilization. These were the necessities which first took primitive man into astronomy—because the primary natural time-markers are the sun, the moon and the revolving heavens.

To obtain a precise definition and determination of the natural cycles of time, primitive man had to make observations over long periods. Astronomy, the first of all the sciences, arose from these observations. Down through the ages the astronomers have devised hundreds of calendars, which have been used by different tribes, peoples and nations. Many of them have been discarded because they were based on insufficient knowledge. Others have undergone frequent changes, in efforts to make them adequate. None have been completely satisfactory, and the world is still seeking improvement.

As regards India, we find the existing situation chaotic and intolerable. Around the use of our somewhat numerous calendars there have grown up countless myths, religious dogmas, superstitions and astrological (and astrolatrical) practices which have profoundly damaged the cultural development of our people, and which urgently require liquidation.



Professor Saha

Since A.D. 1200, the natural life of India has been paralyzed through astrology and foreign rule—but more through astrology than through alien government. We cannot afford to delay any longer the establishment of a new *National Calendar*, purged of astrological anachronisms and

Recently elected to a seat in the Indian Parliament, Professor Saha of the Institute of Nuclear Physics in Calcutta is one of his country's most influential scientists. This article is abstracted from a scholarly 30-page monograph published by the Indian Science News Association.

falsifications, a calendar which will gradually replace all the confusing local almanacs and thus prove not only a boon but also a great unifying factor in our country.

As we study this important project, it is clear we should use as our *basis* the proposals which have been internationally advanced by The World Calendar Association. They represent a far-sighted improvement on the current Christian* (or Gregorian) calendar, which is now used in a great part of the civilized world, but which in many ways is an extremely inconvenient and unscientific system of time reckoning.

Let me say, at this stage, that we astronomers as professional men must do more than merely suggest the wisest measures of reform. If we want these measures to be adopted and to endure, we must also propose methods whereby the Indian people generally will be induced to approve the change and to abandon their old and ingrained astrological practices. It is a simple lesson of history that only dictators like Julius Caesar or religious leaders like Mohammed* and Pope Gregory wield the power to *impose* such measures of reform. We should remember that although the Greeks produced the greatest astronomers of ancient times, these talented gentlemen could do nothing to remedy the calendar confusion around them: the city states of Greece employed nearly a hundred different calendars, and because there was no central authority to compel the use of a single system, this confusion went on interminably until Roman conquerors came and forced everybody to conform to their absurd and unscientific Roman system.

In our country, then, the mere enactment of an all-Indian National Calendar is not sufficient, for it may become a dead-letter (as happened in the case of the well-intentioned calendar reform

* What is now known as the Christian calendar had originally nothing to do with Christianity. It developed by way of Rome and Egypt from the calendar of semi-savage tribes of Northern Europe, who started their year with the beginning of spring and had only ten months of 304 days, ending about the time of the winter solstice (25 December), the remaining 61 days forming a period of hibernation when no work could be done owing to the severity of the winter, and so this period was simply not counted. The city state of Rome took this calendar and made several corrections, including the division of the hibernation period into the months of January and February as the 11th and 12th months of the year. Julius Caesar after his conquest of Egypt introduced new corrections and refinements, including the leap-year principle. His calendar spread throughout the Roman Empire and survived the adoption of Christianity. But the Christians introduced their own religious holidays, which were partly Jewish in origin and complicated by the lunar aspects of the Jewish calendar.

The seven-day week was imposed on top of the Roman pattern by Emperor Constantine, and proved an awkward complication which only now is on the way to adjustment through the changes proposed in The World Calendar. (In order to make the calendar perpetual, at the same time retaining its astronomical accuracy, the 365th day of the year will be left outside the weekly cycle and called Worldsday. In leap years, the same treatment will be used at mid-year for the extra 366th day. With this ingenious device, and a slight correction in the lengths of the months, The World Calendar makes the year divisible into equal halves and quarters. Every year is the same, every quarter identical.) In India the weekday was unknown to the ancient indigenous systems of time reckoning: it must have migrated to India in the wake of Greco-Chaldean astronomy and astrology.

* The purely lunar calendar still used by Islamic countries was introduced by the prophet to release his followers from dependence on the learned Ulema (doctors-of-the-law) for finding out the time of religious observances. The lunar year, starting with the month of Muhurrm, may begin on any date of the solar year, and the Mohammedan year slips through the solar year in 32½ years. This complete severance of the year from the seasons has been found very inconvenient.

measure of our Emperor Akber* in the 16th Century) unless there is a living organization to work out details, to carry on a persistent educational propaganda program, and to keep the government aware of the usefulness of the new system and the harmfulness of the old.

This is one of the reasons why we propose to combine our recommendations for calendar reform with proposals already under way for an Indian Greenwich, a national observatory to be located in the central part of the country, which will have a competent staff of astronomers to compile an annual calendar and place it officially before the nation yearly.

A National Observatory, entrusted with the task of producing not only an annual calendar, but also an Indian Ephemeris and Nautical-and-Air Almanac, will be a great and useful institution. It is true that the British and American Ephemeris are now internationally accepted undertakings, but an Indian version with the proper local modifications and using Indian nomenclature, will be of great utility and cultural value, not only for the Indian naval and merchant marine and for the Indian Air Force and commercial air lines, but also for the whole civilization of our country.

In this connection let me point out again that astronomy came into existence for the purpose of satisfying an elemental need of civilized life. It has stimulated human enterprise along very fruitful lines, and has proved to possess the highest utilitarian and cultural value through the ages. In India more than a thousand years ago, the influx of Greco-Chaldean astronomy led eventually to the formulation of the calendar systems we still follow, and it led also (between A.D. 300 and 1200) to original contributions by famous Indian scholars to astronomy, geometry, trigonometry and algebra. This flood of cultural activity was unfortunately accompanied by a cancerous growth of astrological fantasy,* which

* In Iran, the great Sultan Melik Shah of the Seljuk dynasty, introduced the Jelali solar calendar in 1079, and this achievement was brought to India in 1584 by Emperor Akber. After a few decades it fell into disuse, but it gave rise to a number of hybrids like the Bengali "San" and the Fasli eras which are still current in parts of India. The Jelali calendar is one of the best solar calendars, as it takes into account the precession of the equinoxes and gives a better approximation of the actual tropical year than even the Gregorian rules. Akber's reform measure was misunderstood and in the absence of central guidance became combined with ancient errors. Further, it took on local color in various places and the very purpose of introducing a national calendar was defeated. But it was a worthy attempt, the greatness of which should be properly appreciated.

* Today in India, for the determination of the "propitious" date and moment for all sorts of activities and observances, the people are entirely dependent on astrologers, who pretend to possess the knowledge to produce such information from the ancient formulas. In order to compel obedience and a uniformity of practice, the astrologers have invented "divine punishments" for people who dare to carry out life's ordinary activities without consulting them or without observing their requirements. Our people have become hopelessly dependent on the astrologer and subject to the hallucinations he has invented, which have deprived them of freedom of judgment and enterprise. A thoughtful person might well ask regarding these divine punishments, "Has God Almighty the mentality of a village pedagogue that He will inflict a severe punishment on a sincere devotee for committing an arithmetical mistake?" . . . The dates and moments of auspicious days are given by different combinations of ancient astrological elements, for which it is not possible to find any scientific justification. Moreover, as the ancient calculations do not agree with the actual positions of the heavenly bodies, what importance can be attached to these astrological sanctions? The accumulated error is now nearly 23 days, and the astrologer's calculations have long since reached the stage of total absurdity.

ultimately choked the spirit of free scientific inquiry and left our people victims of the hallucinations and inventions of astrologers. This development had very unhappy consequences for India—from which we are still suffering. It was because of such false doctrine that we lost our place in scientific progress, and the cultivation of astronomy moved into the hands of the virile Islamic nations, whose capable scholars made substantial contributions to observational astronomy and nomenclature and classification of stars.

The world-wide conflict between scientific astronomy and fantastic astrology went on throughout the middle ages. A great period of astronomical advance began with the Renaissance. Copernicus gave the world his theory of the solar system. Kepler discovered the laws of planetary motion. Galileo invented the telescope and enunciated the laws of dynamics. To meet the needs of navigation and scientific inquiry, national observatories were founded in Paris, London, Berlin, Rome, St. Petersburg and other western cities.*

This period culminated with Newton and his law of universal gravitation, which explained planetary motion and the precession of the equinoxes. When Newton was asked why he chose astronomy for his life work, he replied that he wanted to find out whether astrology had any rational basis. Astrology was then the common name for what we now call by two names—Astronomy and Astrology.* But scientists were beginning to realize the spurious nature of the latter, with its practice of casting horoscopes and foretelling the future from the position and motion of the planets. Newton's discoveries smashed the foundations of the false science by showing that the position of planets and the peculiarities of their motion were simply the result of universal gravitation and had no bearing on human activities.

About the same time, Edmund Halley made his observations of the comet which has since borne his name. Comets appear from nowhere and on account of their weird appearance had always been taken to portend some great calamity. Halley figured from ancient records that the comet of 1681 had appeared on three

*Prototype of modern observatories was that founded by the Danish genius Tycho Brahe in 1576. The telescope came along in 1609, and the first of the new kind of observatory was that used by Galileo in Padua in 1610. Next came the Tower of the Winds, established at the Vatican by Pope Gregory, the calendar reformer. Paris national observatory dates from 1667, Greenwich from 1675. In the United States, the Washington national observatory was founded in 1843.

* Though astrology has proved very harmful, it is doubtful whether without this astrological stimulus, leaders of early civilizations would have paid any attention to the cult of star-gazing, which in all ages has been regarded, superficially enough, as a subject of no practical utility . . . Whatever the motive, we owe to the Chaldean astronomers the accurate determination of the periods of the sun, the moon and the planets, and peculiarities of their motion, the discovery of phenomena like the precession of the equinoxes, and the evolution of a mathematical symbolism to express these discoveries. But after 100 B.C., the Chaldeans degenerated into professional astrologers, who were highly prized by the superstitious Romans for the casting of personal horoscopes and fortune-telling, a practice resented by great leaders of Roman thought like Cicero and Seneca as leading to national degeneracy. The torch of astronomical science passed to the Greeks, who freed themselves of the idea that planets were gods, but regarded them as mere material bodies subject to some laws which they tried hard to discover, and came very near doing it. Through the Greeks the knowledge of astronomy and astrology passed to the Roman Empire. But Roman contribution to astronomy was almost nil, and the people of Europe, newly converted to Christianity, paid more attention to astrology than to astronomy.

earlier occasions at intervals of 76 years, and he calculated from the Newton theory that it had a very long elliptic orbit and would re-appear at intervals of 76 years. His deduction that comets obey the law of universal gravitation proved that these heavenly visitors could no longer be interpreted by astrologers and soothsayers as an indication of divine displeasure at man's wickedness.

Around 1774 William Herschel, an amateur astronomer, began to view the heavens with telescopes of his own making which were much more powerful than anything previously manufactured. He discovered double stars, and found many of them going around each other according to the law of universal gravitation. Half a century later, instrumental techniques had developed so far that the distances of stars could be measured, and then for the first time the immensity of space was brought home to mankind. It takes light nearly four years to reach us from the nearest star, as contrasted with eight minutes from the sun, and now astronomers are measuring characteristics of stars millions of light-years away. Each of the stars is in fact a sun, mostly larger than ours, and frequently possessing planets in attendance. There is no reason why some of these planets should not be inhabited, and thus astronomy has blown away the myth of man's preferential position in the Universe, which has been the basis of much astrological and religious doctrine.

A century ago, astronomy appeared to have reached a rather sterile phase, when it seemed there was not much more for the astronomer to do. But the development of photography and of spectrum analysis put new life in the old frame. Suddenly the new science of astrophysics opened vast horizons of knowledge. The Americans, with their huge material resources, enthusiasm and mechanical skill, took the lead and their great observatories became the envy and wonder of the Old World.

Indian astronomy, after a long period of paralysis due to astrological reasons, has lately made some significant progress in astrophysics. The first successful physical interpretation of the spectra of the sun and the stars, which had been accumulating for sixty years, was made on Indian soil about 32 years ago, and was hailed by Sir Arthur Eddington as "one of the ten great events in astronomy since Galileo." This event gave a tremendous stimulus to astrophysical studies all over the world—studies which have since been enriched by the labors of Chandrasekhar in America, Kothari at Delhi, Banerjee at Allahabad and Sen at Calcutta. Our Indian scientists have done their best, but they do not yet have any observatory or laboratory where they can turn for practical and observational work on their theories. Many of our best men are getting a welcome asylum abroad.

India has so far only two observatories worth the name—Kodaikanal and Hyderabad. No Indian university has any observatory of importance. I hope sincerely that this situation will soon improve. Pursuit of astronomical studies is investigation of Nature on a scale unattainable on the earth, for on account of the wide variety of physical conditions, phenomena are taking place in space which we cannot reproduce on our planet. Such knowledge as astronomy brings us has always fertilized the human brain

and led it into fresh fields of enterprise.

And now to return to the problem of an all-India National Calendar. Our analysis of the situation suggests the following objectives:

1. *All calendar calculations should be made for an Indian Greenwich to be located in the central part of India.* At the present time, certain calendar elements are fixed by rules which are different in different parts of the country. In other words, calculations of "auspicious" days may be correct for one locality but incorrect for another. The question is: Are all these complex rules needed for personal welfare or national interest? Analysis shows that the rules are all consequences of luni-solar adjustment, and are purely mathematical in origin. They cannot have the mystic meanings attached to them by astrologers. All days and moments are otherwise equally good, and the more one examines the matter, the more one is convinced that the idea of auspicious and inauspicious moments is a mere figment of the imagination.

2. *Days should be calculated in the accepted astronomical manner, from midnight to midnight of Indian Greenwich.* At present, the Hindu civil day is figured from sunrise to sunrise, in contrast to the Jewish method of considering a day as the period between sunset and sunset. Throughout India many calendar calculations are made by way of "tithi" or lunar days. Historically these tithi have sometimes been figured from moonset to moonset, sometimes from moonrise to moonrise. By strict mathematical definition they represent one thirtieth of the lunar month, beginning from the moment when conjunction of the moon with the sun is completed. They are enumerated by numbers; the first, second, third, etc.

3. *The astrological elements in our present system should be abandoned (as far as the official government calendar is concerned) and the calendar made simpler and applicable to all parts of India.* It may be left to the Panchang-makers (publishers of popular almanacs containing astrological data), to frame their lunar calendars,* but lunar calendars should be avoided for all civil purposes as far as practicable.

4. *It will be desirable from an astronomical viewpoint to start the year at the vernal equinox or winter solstice.* In India there have been 25 different kinds of calendars, some of which are now extinct. If we leave aside the variant year-beginning and the era-beginning, all the calendars now current in India employ almost identical rules of time-reckoning. To be precise, three different systems are now in use, which differ slightly. They are all based on the solar calendar, which serves as the door post to which the lunar calendar is hinged. It is the lunar calendar which determines the right date and moment for undertaking various enterprises and religious observances. This emphasis on moments (Muhurtas) is what gives our calendars their distinctive stamp. It appears that our ancient astronomers were actuated by the motive of defining everything in a very

* The word Panchang literally means "five-legged calculations," so-called because they supply five different astrological elements which are used to calculate auspicious and inauspicious days and moments for various human enterprises and religious observances. These five elements are: 1. The Vara or weekday; 2. The Tithi or lunar day; 3. The Karan or half lunar-day; 4. The Nakshatra, or stellar situation surrounding the moon on each day; 5. The Yoga, a complicated division of the lunar month into 27 segments.

precise and mathematically accurate manner, but this had the effect of making the calendar extremely, and I think unnecessarily, complicated. . . . For a sound year-beginning, all of the four cardinal points of the year (Vernal Equinox, Summer Solstice, Autumn Equinox and Winter Solstice) have been used at various periods* by ancient calendar-makers: but as time passed, their year-beginning has always tended to become artificial, owing to errors in the rules or other causes. For example, 1 January, which is the year-beginning in the Roman-Christian calendar, appears originally to have been the Winter Solstice Day in 750 B.C., but it lost all connection with that point of anchorage because the Romans had no idea of the correct length of the year.

5. *Year length shall be 365.2422 days.*

6. *The present irregular months shall be given up in favor of the lengths proposed by The World Calendar.*

In pursuit of these objectives, we make the following observations on the basis of our study of foreign and Indian calendars:

A. The so-called "Christian" calendar, now used in most parts of the civilized world, is an inconvenient and unscientific instrument.

B. Indian calendars are in an extremely confused state, partly because they follow systems laid down 1,400 years ago; thus the calculation of seasons is wrong by 24 days, and the length of solar months followed by the almanac makers violates the fundamental rules of scientific astronomy.

C. It is difficult to work out a convenient scheme of months according to the 1400-year-old rules. This effort should be given up in favor of the proposals of The World Calendar Association.

D. The National Government of Free India should not allow such an important and unifying item of life as the calendar to remain in its present confused state. A National Calendar, based on proper solar time reckoning, should be devised for the whole of India.

E. The private almanac makers, who publish the astrological data required by the people of India, should be left to frame their own lunar calendar and peg it to the official National Calendar as they wish; but lunar calendars should be avoided for all civil purposes as far as practicable.

F. The Indian Government should construct an astronomical observatory at a convenient central point and attach to it a body of expert astronomers whose duties should include the annual compilation of an Indian Ephemeris and Nautical-and-Air Almanac and a National Civil Calendar.

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* The autumn equinox was the starting point of the year in the short-lived calendar of the French Revolution (1792). This remarkable calendar, with its ten-day weeks and its five or six year-end days, was devised by the great mathematicians Laplace and Lagrange and the poet Fabre d'Eglantine (Fabre of the Wild Rose). It never gained much recognition even in France outside of Paris, and was abandoned after a short course of 14 years by Napoleon, as a condition for his recognition by the Roman church.

Astronomers have pointed out that the first of January has a certain scientific basis for the year's beginning. On or about 1 January, the earth is at its shortest annual distance from the sun, about 91,500,000 miles; whereas six months earlier, when the sun is farthest away, it is at a distance of approximately 95,000,000 miles. It follows from this that on the day in January which marks the earth's perihelion, our planet also receives the greatest amount of solar heat. It has been computed that the earth receives 10 per cent more heat at that time than it does at the beginning of July.

ACTIVE INTEREST IN IRELAND

By John J. O'Meara, Ph.D.
Professor at the University College of Dublin

GROWTH of interest in calendar reform throughout Ireland has stemmed largely from the constantly increasing expansion of factories and of mechanized agricultural production. In an industrial civilization the flaws and defects of the present calendar are continually in evidence, impairing the accuracy of statistical information and causing headaches for production and accountancy departments. At the same time, there is steady demand for calendar standardization from the whole educational field, which finds the current system with its wandering dates a never-ending source of disorder and confusion in scheduling scholastic activities.

Reforms in administration and methods is, of course, the order of the day in Ireland, as it must necessarily be in any new and rapidly developing country. Most of these reforms are internal matters and can be got under way without too much difficulty. But calendar revision cannot be undertaken by any single nation or group of nations: it must be done more or less simultaneously the world over—and a small country like Ireland is hardly equipped to undertake the leadership in such a crusade. Nevertheless, Ireland wants this change, and most of our leaders realize keenly the need of it and the substantial benefits which will accrue from a better time-measuring system.

When one glances at the ancient history of the Emerald Isle, one discovers that the Irish and their Celtic ancestors were pioneers in calendrical experimentation. Our forefathers, the Celts, inherited a calendar from the great family of Indo-Europeans and developed it in their own peculiar way. The result is best seen in the Coligny calendar, brought to light by archeologists less than fifty years ago. It was a highly distinctive calendar of twelve months, each month being marked lucky or unlucky and made up of 29 or 30 days. The total number of days in the year was 355, so that it was necessary to intercalate two months every five years or so. The names of the months, beginning with that which roughly corresponds to May (an unlucky month) were as follows:

Cantlos	Anacanlos	Simivis
Samon	Ogron	Equos
Duman	Qutios	Elembiu
Rivros	Giamon	Edrin

Some of these names still persist in a disguised way in our language. For example, the Irish word for winter is *geimhreadh*, which has been connected by scholars with the month named Giamon (December), and there are several other similar examples.

But an even more remarkable relic or souvenir of the old calendar remains in present-day Ireland in the traditional veneration for the old Coligny quarter-days—the first days of May, August, November and February. There are few parts of Ireland where ceremonies (going back in their origins to ancient pagan

rites) are not held on some or all of these days. There is a persistent belief in Irish minds and hearts that they mark the "true divisions" of the year, as may be seen from the many entries to this effect in folklore and folk songs.

At a certain period in Irish history—about the seventh century, when we were just beginning our missions to the Continent and earning the title of *Island of Saints and Scholars*—we won a peremptory and unenviable notoriety because of our peculiar practice in one important detail of the calendar, the celebration of Easter. We were out of line with the rest of the religious world. It came about through the interruption of communications with the Continent during the sixth century, which left us unaware of certain adjustments which had been made in Rome as to the time for celebrating the Pascal holiday. We held to the old method of calculation, and it was only after the Synod of Whitby in 664 that the Roman system began to be accepted by our religious leaders. In the meantime, however, we had been branded as non-conformists —like the Quartodecimans, who had been excommunicated for insisting on celebrating Easter on the fourteenth day of the Jewish month of Nisan. This may seem like small potatoes today, but in the seventh century it led to fierce quarrels not only between the Irish and the Continentals, but also among ourselves. Historians even suggest that the elaboration of the story of the coming of St. Patrick was due to the efforts of those who sought thereby to reconcile the Irish, especially those from the North, to the Continental method of dating the Easter observance.

Since those far-off days when the calendar became a fighting matter, the Irish have notably kept an open mind to calendar reforms of any kind. Thousands of words have been written and published about improvements, revisions, standardizations and stabilizations. One of the most learned works of this kind is the dissertation of Ussher, published in 1648, under the title *De Machedonum et Asianorum Anno Solari*, followed a century later by the vigorous monograph of John Echlin (1755), entitled *An Essay Upon the Amendment of the Calendar*. This latter author, among many common-sense observations about calendar reform, lays considerable emphasis upon a paragraph which will commend itself to supporters of The World Calendar:

"And if the additional day of Leap Year had been transferred from February and placed at the end of December, the form of the year would have been more elegant and more simple." Elegance counted for much in the Dublin of the 18th century, and still has its bearing upon current proposals for calendar revision. Certainly Irish scholars of today are agreed that The World Calendar easily passes the tests of elegance, simplicity and common sense.

Coming to our own times, there is a convincing booklet which reposes in most important Irish libraries under date of 1930, which reviews most of the alternative plans presented to the League of Nations at that time, and gives the strongest possible support to The World Calendar as the best of them all. Here is a typical paragraph from that monograph, which carries the author's characteristic strong note of firm conviction, and which can stand as the 1952 attitude of thoughtful Irish leaders:

"The causes which have led to the

present demand for some revision of the calendar are mainly industrial complexity and international association. The changes that have taken place in civilized communities in the past hundred years have created a situation so different from that of former times that some reform is essential in order to make the calendar an instrument of precision for the requirements of today. The many international congresses, conferences and sports events of our times make fixed dates desirable, and the creation of large units in industry and commerce has made statistics the basis of action, whereas in former days statistics were only the confirmation of experience."

Ireland today is at one and the same time (a) a predominantly Catholic country, and (b) a country whose agriculture and industry is rapidly being modernized and expanded. These two factors have a distinct bearing on the prevailing interest in an improved calendar.

Regarding the benefits of calendar reform as a help to our industrial productivity I need say nothing here, because such benefits are well understood and accepted wherever men engaged in business are alert, courageous and well-informed. Irish industrialists have lately given plenty of evidence that they are keen to exploit every resource of modern science and every rational improvement in methods to benefit their country and its people. Just as they have lately set up an advanced school of cosmic physics, they are prepared to press for calendar reform in any and every international forum.

On the religious side, no loyal Irish citizen can bear to remain silent. His country's whole life is at the mercy of an illogical and unnecessary *movable Easter*, and everybody is aware of how vitally the nation's welfare would be affected by the stabilization of this wandering religious feast. I concede that this is a matter for the religious authorities to legislate, and I leave to them all discussion of the inconveniences of the present system that arise in their own jurisdiction. But I would be remiss in my duty if I did not glance at the civil effects of this irregularity, particularly in my own field of *education*.

The trouble here is merely an aggravation of the calendar difficulties which will be remedied by the *perpetual* character of The World Calendar—the constant need to draw up new and complicated time schedules for our schools and colleges. Let me give an example from a letter on this subject:

"Sir: The best guarded secret of the year is the date of closing of National Schools for summer vacation. Would not the Minister for Education make the date constant, so that parents may have time to book houses or hotels for the holidays. . . ?" It is difficult, in fact, because of other requirements which cannot easily be predicted and which depend upon calendar vagaries, to make the date constant throughout the country as a whole. One can, nevertheless, easily see how annoying and frustrating it is for a harassed parent to try to arrange a holiday for his children at the height of the tourist and holiday season. He pays more, of course, and gets less.

Here is but one small instance of how our primary schools are affected by the present calendar arrangements. If I were writing a report on the situation in these lesser schools, I would have to dis-

cuss many other incidental phases of the matter.

Our secondary schools are in a worse plight. The length of the third term of the school-year is determined by the date of Easter on the one hand, and by that of the State Examinations (early in June) on the other. When Easter Sunday falls as late as 25 April, the third term is curtailed to just five weeks. The result is that *parents*, who often have sent their children long distances to boarding schools, feel cheated in paying a full fee for so short a term. The *students*, having been exhausted in a too-long second term, are in poor shape and have little time at the end to work for the State Examinations. The *school-authorities*, having spent a great deal of money in preparing cricket creases, tennis courts, and athletic grounds for the students' outdoor recreation in the Summer term, can get only five weeks use out of them and even then can use them only very little, because of the scramble to get ready for examinations. It is not necessary to elaborate on how unsatisfactory for all concerned is such shortening of the one term in the Irish school-year when school-life should be really attractive, profitable, and memorable.

What has been said of primary and secondary schools can be repeated with greater emphasis in relation to the colleges and universities. The multiplication of faculties and the institutional connections of the professional faculties (such as medicine with hospitals) makes it virtually impossible to devise dates for commencements and term endings which will not be unsatisfactory for most concerned. At meetings of Academic Bodies in the Springtime, hours upon weary hours are consumed in trying to arrive at schedules which will recommend themselves to all; but invariably a date has to be imposed, and whole segments of students and staff have to bear the discomfort and distress.

I have given too much space, perhaps, to the aspects of calendar reform as applied to the educational field. This is excusable, because it happens to be the domain with which I am most familiar. I am sure, however, that similar criticism of the calendar applies to business bookkeeping and perhaps even more emphatically to the activities of government, courts and diplomacy. It has always been my theory that calendar irregularities are the cause of a major part of the official fussiness which we classify under the general heading of "red tape." The immense volume of paper work in civil administration is proverbial. It directly handicaps all our dealings with officialdom. It permeates financial and budgetary activities, and its withering hand is felt in every avenue where figures are used, or where yearly and monthly reports are assembled. There can be no doubt that a stabilized calendar would encourage the simplification of government business. It would help to eliminate bother and duplication.

The value of calendar simplification in private business has long been recognized. Chambers of Commerce have endorsed it. Industrial groups of many kinds have asked for it. When the extent of public activities conducted by local and national governments is considered, it must be conceded that here, too, is a vast field in which a revised calendar will be of benefit.

CANADA AT WORK on TIME MEASURES

By A. J. Hills and G. G. Blackburn
A Radio Program, broadcast over 46 stations in Canada, July 1952

ANNOUNCER: "Canada at Work" . . . Our subject today is the proposed standardization of the calendar. A year ago organizations representing 83 per cent of Canadian organized labor asked the Government of Canada to take steps to advance the adoption of The World Calendar. Just what is The World Calendar? "Canada at Work" brings you today an interview with A. J. Hills, Chairman of the Canadian Affiliate of The World Calendar Association. Mr. Hills will be questioned by George Blackburn, Director of Information of the Federal Labor Department. Mr. Blackburn—

BLACKBURN: Just what is The World Calendar, Mr. Hills?

HILLS: Well, briefly, Mr. Blackburn, it is merely the present-day calendar with certain reforms which would eliminate some bothersome irregularities arising out of the fact that the months in the present calendar vary in length with the general result that the days in the week hardly ever fall on the same date.

BLACKBURN: Perhaps it would be easier for us to understand why so many people want a new calendar if it was explained what is the matter with the present-day one. I mean what difference does it make whether the Monday falls on the third this month and the next time, we will say, Monday falls on the sixth. I don't see that it makes much difference.

HILLS: Well, to answer the last part of your question quite briefly—It would make quite a difference to you, if the 24th of May, a holiday, fell on a Monday instead of a Wednesday, wouldn't it?

BLACKBURN: Yes, I can understand that you are suggesting in other words that I would like to have the holiday on a Monday so that I'd have a long week-end.

HILLS: Precisely, so would practically everybody else and this is one of the chief benefits to be obtained from The World Calendar. For instance, if The World Calendar is adopted, Christmas Day would fall on a Monday, every year.

BLACKBURN: Just how does The World Calendar accomplish this, Mr. Hills? Would it mean that we would have more months in the year? How could you possibly adjust the year so that the same date would fall each year on the same day of the week?

HILLS: I think the answer to that question, Mr. Blackburn, will indicate to those listening the simplicity and the practicability of the proposal. The complications in our present calendar stem mainly from the fact that a period of 52 weeks occupies only 364 days, while the actual days in a year are 365 in ordinary years and 366 in leap years. It is this extra day or two which keeps the month-dates in constant rotation throughout the days of the week. If you can somehow eliminate or change those extra days, then the year settles

down into an orderly arrangement of 52 weeks.

BLACKBURN: Well, that sounds simple enough, Mr. Hills, but what do you do with the extra days? After all, the sun comes up every morning and goes down every night and the world can't be expected to imitate Rip van Winkle for 24 hours or more every year.

HILLS: No, certainly not. With one exception the changes would not be noticeable as far as day-to-day living is concerned. The World Calendar takes care of the 365th day each year by inserting it between the last Saturday of one year and before the first Sunday of the next year, that is between 30 December and 1 January. It is suggested that this day be called Worldsday, and it is also proposed that it be established as a world-wide holiday which would probably be acceptable by employers and employees as a holiday either in place of New Year's Day or as an extra day added to that week-end. Now in leap years you have another extra holiday called Leapyear Day, and it is proposed that this day be inserted after 30 June. Now again that day would come between Saturday and Sunday. Thus the two extra days beyond the 52 weeks in a leap year would not displace the standard arrangement.

BLACKBURN: It would appear then that these are the only two changes necessary to make the year come out even.

HILLS: These are the only changes that are necessary. It is, however, considered desirable for uniformity to rearrange the number of days in certain months so that the first month of each quarter of the year has 31 days, and the remaining months 30 days each.

BLACKBURN: You mentioned that Christmas would come on a Monday. Is it possible that all our holidays in Canada would end up on a Monday without changing the date of these holidays?

HILLS: No, not all our holidays would occur on Mondays, but let us look at the holidays we celebrate in Canada. Christmas Day and New Year's Day would come at the week-end. In The World Calendar the 24th of May would always come on a Friday, 1 July would always come on a Sunday, Dominion Day on Monday.

BLACKBURN: Well, I can understand what you have been saying. Are there any other advantages to the new calendar?

HILLS: Oh yes. Because the present calendar changes each year in relationship to the days of the week, a tremendous amount of expense is involved in drawing up each year business schedules, and educational calendars. All persons using records and statistics would welcome an accounting period of fixed length and quality which would make each month identical with the corresponding month of previous years. Both industry and the workers themselves would benefit from the replacement of the mid-week holidays which cost several million dollars through absenteeism each year. Governments would benefit from equal quarters which would make it easier to figure out custom receipts, taxes, internal revenue collections, interest on Government Bonds—all of which now entail highly complicated and costly operations. It has been estimated that of the 112 dated holidays in a 28-year cycle, more than 57 per cent have occurred on days generally regarded as undesirable. That is to say, they occurred other than at week-ends.

BLACKBURN: Well, could we not merely fit all our holidays on Mondays

and leave the calendar as it is? Would it not accomplish exactly what The World Calendar intends to do with other changes?

HILLS: No, it would not. For although you put your holiday on a Monday, Monday can vary within seven dates so that if this holiday is used as a milepost within the year, a season can actually be shortened or lengthened. This may sound a bit complicated and I will try to illustrate what I mean by using Labor Day this year as an example. Labor Day, as you know, comes each year on the first Monday in September. This year it is going to be 1 September. Now this is the earliest possible date for Labor Day. Next year, Labor Day will come on the 7th of the month. In other words, next year our summer will be six days longer. I don't mean that the weather will remain warm for another six days, but six days will be added to our tourist season. Seven days will be added to the period within which people can take holidays with their children when they are away from school. To put it in another way, our tourist season and the holidays of our children have been shortened by a week due only to the vagaries of the calendar.

BLACKBURN: This must cause quite a reduction in income for tourist establishments, doesn't it?

HILLS: Most certainly. If you consider that our summer season is two months, then this six-day reduction is practically a reduction of 10 per cent affecting the total income for our holiday resorts and shortening the period that our children are away from school. Labor Day is recognized as the base on which all educational institutions in North America build up their schedule of events for the scholastic year. From its varying date, must be worked out the dates for opening and closing terms and intermediate events. With The World Calendar, a constant schedule could remain in existence for practically all time.

BLACKBURN: Would you care to tell us, Mr. Hills, just how we got ourselves into this situation where we are using an awkward calendar?

HILLS: Well, as you probably know, the awkwardness of the present calendar was caused by the interjection of the week into the Roman calendar. The irregularities of the months in length resulted from Roman superstition.

BLACKBURN: You mentioned previously, Mr. Hills, that shut-downs caused by holidays in the middle of the week resulted in losses to industry. Would you explain why this is so?

HILLS: Well, the stopping and restarting of the wheels of industry, particularly in heavy manufacturing, is a costly process. The loss in production caused by this shut-down in the middle of the week would vary considerably, of course, in different industries, depending on such factors as type of material used, technology of process, and the articles to be produced. It is obvious in such industries as heavy iron and steel, the loss can assume a fairly large proportion. But apart from the loss in production because of the one-day shut-down, there is the question of absenteeism when a holiday occurring on, say, Tuesday results in many workers failing to report on Monday. Further, the long week-end has come to be regarded as most desirable. With rapid transportation, we are encouraged to travel more than our forefathers did, and a long week-end often provides us

with the necessary time to make a proper trip. We consider this to be part of our high standard of living on this continent and rightly so. I firmly believe that to many workers a holiday on a Monday is worth much more than one in the middle of the week. This is particularly true for those people with families.

BLACKBURN: I don't think there is any argument there, Mr. Hills.

HILLS: I think I should add, Mr. Blackburn, that the loss to the employer caused by misplaced holidays directly affects the worker, since there is a direct relationship between wages that the employer pays and the expectation of profit on the finished product.

BLACKBURN: What about the transportation companies? Do they not find that heavy week-end travel on those long week-ends we have been talking about a particular headache to them? Would they not have some objection to this new calendar?

HILLS: Well, they do not oppose the introduction of the calendar since they also see some benefits from it. Like other industries, a regulated calendar would be of value to their statistical and accounting departments and in the case of heavy travel on long week-ends, they would be able to work out their plans for shifts of workers on a regular basis throughout the year. The experience of each year would be useful for the next, since conditions would be similar.

BLACKBURN: Would it be possible for one country to introduce this calendar and still live without difficulty from the point of view of trade and industry with the rest of the world?

HILLS: The adoption by one country would be difficult. The World Calendar Association strives for the adoption through United Nations action. Our organization has affiliates in 37 different countries and endorsement is being obtained at a fairly rapid rate, by the more influential and representative organizations of these countries.

BLACKBURN: I don't suppose you would care to hazard a guess as to when we might expect the adoption of The World Calendar, Mr. Hills? I must say that I am presuming, from what you have said, that we might reasonably assume that this is inevitable.

HILLS: I appreciate your confidence, Mr. Blackburn, and I want to say that I am entirely confident that the adoption of The World Calendar is inevitable. As far as hazarding a guess when this is to come about, this is most difficult, but I would like to point out that in this era of scientific precision, the imperfections of the present calendar make it stand out as a disturbing factor in our whole pattern of living. The changes which have taken place in the last half-century alone, in transportation, in communications, in social and living conditions, make it ridiculous for the civilized world to continue using a calendar which was last changed in the days before watches, in the days when time was still measured by burning candles or lamps, by sundials, sandglasses and other crude devices. Time signals are now sent out accurate to one eight-thousandth of a second. Yet we still allow our summer season to be cut or enlarged by 10 per cent due to the vagaries of the calendar which comes from the days when the fastest thing on wheels was a Roman chariot. Is this not absurd?

LESSONS from TRAVEL and TOURISM

By Allan P. Ames
District Manager, Florida State Chamber of Commerce

STUDENTS of calendar reform have had much to say about its importance to business men, teachers, lawyers, bankers, and farmers; but they seem to have frequently overlooked a very lively population group which, in the aggregate, is the most numerous of all. I refer to the vacationers or, as we call them in Florida, the tourists.

It is true that the average tourist is away from home on pleasure bent for only a small part of the year; but as a factor in the over-all national economy he adds up to an impressive total. And although he represents a wide variety of locations, tastes, and occupations he has one common interest. That interest is TIME.

Some surface thinkers may challenge this statement. They may declare that release from the demands of routine work carries with it freedom from the restrictions of clock and calendar. Vacations, above all other periods, they may say, should not be hampered by these inexorable tyrants. This theory is plausible, but to those who have had much to do with folks on vacation it just doesn't prove.

We claim to know tourists down here in the "Sunshine State." We would be foolish not to study them, because catering to their needs is our biggest industry. The state Chamber of Commerce figures that Florida last year was visited by 4,800,000 persons from outside the state and that tourism during that period accounted for $840,000,000 of the total income of Florida residents.

At least four-fifths of the travelers you meet in Florida are on vacation. One-fifth are on business or personal affairs. Usually these vacation tours are planned months in advance. With most families they mark the high spots of the year. Planning them is half the fun; preparations may begin a year or more ahead. Here is where the calendar takes the stage.

At a popular Florida motor court I spent an evening discussing calendar improvement with tourists from several different states. They were sitting outside their cottages enjoying the mild February weather. Those who had driven far that day were getting their first taste of the soft, relaxing Far-South climate; they were saying to each other, "Boy! This is the life. This is what we came for." Some were comparing road-maps and talking about routes. A fortyish gentleman of comfortable *embonpoint* asked my advice about the best road to Panama City. His ancient Ford carried an Ohio license.

"When did you leave home?" I inquired when the conversation reached a point that invited personalities.

"The 22d of February, Washington's Birthday," he replied. "That was Friday. I took Saturday off and got away a day early. Wish all these holidays came at week-ends."

"The holiday-makers are getting wise to

that idea," said I. "Instead of putting holidays on a certain day of the month they are setting them on a certain day of the week; like Labor Day, the first Monday in September."

"Wouldn't it be wonderful if they were all like that?" said an elderly man who had been listening in. "I'm in the passenger department of the Southern Railroad; part of my job is getting out timetables. Every year I have to do those train schedules all over again. The holidays move around from year to year and the seasonal trains, especially the limiteds between Florida and the North, have to be planned to fit them. The work must be done over again every year."

"Did you ever think of the possibility of changing the calendar," I asked, "so that the same holiday will come on the same day of the week, year after year?"

"Say, that would be fine," exclaimed a competent-looking tourist, who, I learned later, controlled a group of interstate super-markets, "but could you do it? Every business man, especially a retailer like me, knows how the shifting holidays mess up our sales records. Now if every quarter had the same number of Saturdays and Sundays and the holidays came on the same day of the week each year, any High School girl could make the sales comparisons and handle inventory figures. The trouble comes when we try to weight our monthly and quarterly statistics to balance the differences in week-ends and holidays."

Our discussion group had grown to a dozen or more, most of them substantial looking citizens. They listened as if they were interested. "I used to be superintendent of schools in a small city in Massachusetts," said a pink-cheeked, white-haired man, who looked as if he had passed the retirement age. "Arranging our school programs was an annual nightmare, because the job had to be done over again every year, due, of course, to the irregular holidays."

"Well, if the calendar makes all that inconvenience," remarked a little old lady who was traveling in a big limousine driven by an elderly chauffeur, "why don't we change it? There's nothing sacred about the calendar; is there?"

Here was an invitation to talk about calendar reform; and I went right to work. The way to handle this subject, I have found, depends to a large extent on the character of the audience. The average person at first is interested from a purely practical point of view. The common denominator of my particular group at the moment was tourism. Everybody agreed that a stabilized calendar would be a great help in planning a trip. But the bright-eyed old lady had put the $64 question: If the calendar makes so much trouble why don't we change it?

"Yes, Madam," I answered, with a polite bow in her direction, "you might say that our calendar, in a way, *is* sacred. Men have regulated their lives by it for 2,000 years. Any human institution that old is bound to acquire respect and veneration. In all those years the calendar has been changed only once. The calendar is one of our ancient institutions that hasn't kept up with the march of progress. We realize this more and more the further we advance in science, industry, education, agriculture and other arts of civilization."

"But is anything being done about it?" said the retired schoolman.

"Professor," I replied sternly, "I am astonished that a scholar like you doesn't

know that movements to reform the calendar have been going on for more than a hundred years. At present the generally accepted plan calls for a minimum number of changes in the present calendar. It is called The World Calendar."

A cheerful looking young man in Catholic clericals, who had been listening attentively, but thus far had taken no part in the discussion, interrupted—"Isn't that the one first suggested by Abbot Mastrofini?"

"Why, yes, Father. What do you know about it?"

"Very little, I'm ashamed to say. Only a few days ago one of my friends, a priest like myself, told me that Mastrofini's idea was gaining ground and I ought to learn about it. Can you tell us? I think the others would like to hear, too."

I hesitated and looked around the circle. Nobody got up and left. In fact most of the faces looked expectant. "Go ahead, tell us about it," said the limousine lady.

"All right," I said, "you asked for it! Of course if the year had an even number of 24-hour days, making up a calendar would have been easy. Unfortunately, as you know, the earth takes to go around the sun 365 days, five hours, and 49 minutes. So for three years we come out short of the astronomical year by five hours and 49 minutes. Therefore, in order to catch up with the inexorable movement of our planet, every fourth year we add another full day, the 29th of February. Never mind why they hitched it onto February; there was a reason, but let's get on with the main topic. It was in 1834 that the Abbot, Marco Mastrofini, suggested a 364-day year with the 365th day added outside the week with a name of its own. By this simple device every new year begins on Sunday and the calendar becomes perpetual, the same every year.

"This was the big idea; but it was only a start. Some of the brightest minds of the last century have worked at it. The first problem was the leftover five hours and 49 minutes. That was solved by, every fourth year, adding another extra day outside the regular week. It is called The World Calendar plan now. It places each month-date on the same day of the week year after year. The two extra days provide the machinery which makes this possible. They have names of their own—Worldsday and Leapyear Day—and they will be world-wide holidays. One of these world holidays will be added at the end of December every year, and the other at the end of June in leap years. In this way they will not interfere with business programs. Birthdays, anniversaries of all kinds and other annual commemorations and festivals will always be recorded on the day of the week when they occur, always the same day, as well as on the same day of the month."

Our discussion had begun with talk about holidays; and, as might have been expected, this subject got the most attention. Everybody agreed that holidays falling on the same day of the week every year would be a great and practical convenience. They asked me if the calendar reformers had given thought to that problem and I said they most assuredly had. "But wouldn't many people object to shifting a holiday from its time-honored day of the month?" asked the school teacher.

"We were talking about Washington's Birthday, the 22d of February," I replied. "Do you know that the Father of His Country was not born on that date? When he came into the world the colonies were

using the Julian, or Old Style, calendar, which preceded the Gregorian calendar we are using now. Strictly speaking, Washington was born on the 11th of February. When Britain adopted the New Style calendar, in 1752, the American colonists followed suit. The old calendar was eleven days behind the new one—how it got that way is a long story I won't try to tell you now. To compensate for this difference all the dates were advanced eleven days, bringing the Washington's Birthday celebration to the 22d."

Many of our national holiday dates have been fixed arbitrarily, I explained. Take Columbus Day, 12 October. When we were getting ready in 1892 to celebrate the fourth centennial of the discovery of America with a big World's Fair and to honor the great discoverer there was much discussion about the most appropriate date. According to the Old Style or Julian calendar, Columbus first sighted land in the western hemisphere on Friday, 12 October 1492. But under the Gregorian calendar this date fell on 23 October, eleven days later. President Harrison, for reasons of convenience, set the new holiday on the old calendar date. Like any other fixed date Columbus Day falls not on Friday but on any one of the seven days of the week.

These two holidays, Washington's Birthday and Columbus Day, are good examples of the undependability of the present calendar in fixing anniversaries. If we adopt The World Calendar plan we can establish our national holidays arbitrarily at the most convenient yearly dates. There they would stay for the rest of time; and our descendants would call us blessed. Judging from Labor Day, which falls always on the first Monday of September, most of us, I believe, would prefer to have these holidays come on Monday. But whatever day of the month an annual holiday fell on, it would be the same day of the week, year after year.

I have set down here only the high spots of our discussion that February evening. I believe it is fairly typical of Florida tourist groups. These groups, in winter especially, offer a good cross-section of the American population. They come from every state in the Union. Among them, The World Calendar advocates will find plenty of encouragement. Too long has the discussion of this vital problem been limited to the *intelligentsia*. The man on the street, and the man on the road, is interested—or will be interested if the topic is served up right.

They need to be convinced, however, that calendar reform is more than a theory and a subject for academic study. After they get a bird's-eye view of the problem they want to know what's being done about it. Very few of the people I've talked with on the road have any notion of the progress The World Calendar plan has made during the last twenty years.

An angle of The World Calendar movement that interests women is that the head of The World Calendar Association and the leader of the movement in this country is a member of their sex. Women's Clubs and other organizations like to hear about the work of Miss Achelis. Her leadership and the distinguished personnel of the Association's U.S. Advisory Council make a special appeal to government officials and politicians because they are prima-facie evidence that the movement in this country has no ulterior motives. The calendar campaign is a shining example of unselfish effort.

APPEAL TO REASON

By Edgar L. Jones, Editorial Writer, Baltimore Sun

WHEN it comes to orderliness, The World Calendar has it all over the present imperfect tool with which man marks time. With The World Calendar there would be no more putting up with having four pay days one month and unexpectedly having five the next. There would be no more quarter-years with 90 days, then 91 days and then 92 days. There would be no more years like the one just past which had 181 days in its first half and 184 in its second half. There would be no more wondering whether a certain holiday would fall on one's day off or make a long week-end for everybody. Everything would be fixed in advance, settled, unchanging and devoid of surprises.

With so much in the favor of The World Calendar, the wonder is that it has not long since replaced the Caesar-Gregorian mare's-nest. Yet supporters of The World Calendar have repeatedly encountered indifference and even suggestions that our present calendar is not half so intolerable to the ordinary mind as it is to the orderly mind.

The change, if it is to be made, has to be made on a fairly world-wide basis, and for this reason the matter was repeatedly before the League of Nations. It has been pressed much harder in United Nations circles, where The World Calendar enjoys considered support among what might be called, diplomatically speaking, the weak-but-willing nations. Outstanding among the nations with a tendency to brush the subject aside is our own United States.

The change, if it is to be made, also has to be made for convenience's sake on a day when the old and new calendars coincide. There were great hopes, once, to bring this off at the start of 1950. The failure of the United Nations to act was a damaging setback. The new goal is 1956, when 1 January falls on a Sunday and thus would enable the world to go right into the new calendar without effort.

With an eye fixed on this goal, World Calendarists will keep on trying their appeal to reason. They encourage themselves with the thought that it took more than 300 years for Pope Gregory's revisions to become universally accepted in the world. In contrast, only 117 years have passed since the Abbé Mastrofini proposed his revisions, and already the idea has won approval wherever orderly minds congregate. The only drawback is that the idea has made so little impression wherever political minds congregate.

As an example of the way our old-fashioned system works, take the present year, 1952. It began, not on Sunday,

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Before joining the famous Baltimore Sunpapers, Mr. Jones was a war correspondent for the *Atlantic Monthly*, covering the landings at Iwo Jima and Okinawa. Earlier in the war he drove an ambulance with the British Eighth Army from El Alamein to Tunisia, followed by a short stint in the Merchant Marine during the invasion of Sicily. He is a graduate of Dartmouth College and the School of Journalism at Columbia University.

which would have been the orderly thing to do, but part way into the week. Other new years begin in the dead center of weeks, and still others begin at the end of weeks. There is nothing orderly about it. More often than not, as a result, the first week of the year is a split week, getting business off to a lame start.

This new year, though, makes up for it by being a leap year, which means that industry gets an extra day's production, and labor draws an extra day's pay, and the Government collects an extra day's taxes. The extra day gets tacked onto February, giving that month 29 days instead of 28, while the other months keep their 30 days and their 31 days. There is nothing orderly about that.

For business purposes it is not sound to compare one month with another because they may not have had the same number of work-days. And our holidays wander all through the days of the week. And it is not possible, short of finding an old calendar, to discover what day of the week a certain date in the past fell on. And every year requires the printing of new calendars just to produce a semblance of order in a disordered situation.

The trouble all stems from a situation which is somewhat beyond man's control, as long as he continues to operate on a solar year, lunar month and 24-hour day. The earth, with no sense of orderliness, insists upon taking approximately 365 days to make its one complete revolution around the sun, and 365 is not a number into which twelve can be evenly divided.

Worse yet, the earth's revolution is not an even 365 days but, instead, is 365 days 5 hours 48 minutes and 46 seconds, which means that in every "year" a few hours are left over. The extra few hours are allowed to accumulate until every fourth year we get the extra day, but even this does not work out right in the long run of earth revolutions. So, to make the arithmetic come out right, certain "century leap years" are skipped. That is, the year 1600 was a leap year, and the year 2000 will be. But the years 1700, 1800 and 1900 were not leap years.

This latter point tripped up Julius Caesar, who was responsible for the modern calendar and for leap year, but did not fret over the minor point that his year, in practice, was 365.25 days long, whereas the sun's year was 365.242 days long. Caesar died before it made any difference, but by 1582 his calendar was slow by a full ten days. Pope Gregory corrected this for the Catholic world by dropping the days between 4 and 15 October of that year. By the time the English followed suit, nearly 200 years later, it was necessary to drop eleven days, and it was by this maneuver that George Washington's birthday was changed from 11 to 22 February.

The Gregorian changes in the calendar of Caesar were the latest alterations in a much-altered attempt to keep track of the days, but that does not mean nobody has tried to change the calendar since then. Plan after plan has been pushed by calendar reformists, each convinced that his plan is sensible and rational, if only people would listen. There are still a number of plans today. But the major effort, backed by impressive names, is to put over what is known as The World Calendar, which is substantially the calendar advocated by the Abbé Marco Mastrofini in 1834.

The World Calendar gets around the difficulties of dividing 365 days by 12 or

by any other handy number by having, in effect, a 364-day year. This is done by having an intercalary holiday, called Worldsday, between 30 December and 1 January. The calendar also provides a leap day every fourth year, and it, too, is intercalary and falls between 30 June and 1 July.

The beauty of the 364-day year is its orderliness. Each year begins on Sunday, 1 January, with no more of these roving new years. And each year is just the same. There is no need for a lot of new calendar art each year, because last year's calendar is good for this year or next year or three years hence. (Yet the makers of calendars are favorable to the reform, because they expect to manufacture a much fancier, artier product, one that will endure for many years.)

Furthermore, the quarter-years in The World Calendar are perfect for quarterly comparisons. Each quarter has exactly 91 days, 13 weeks, or 3 months. Each quarter has the same form: the first month with 31 days and the other two months with 30. There is no need to memorize anything to the effect that "thirty days hath September . . . ." February has a full ration of time allotted to it. Each quarter begins on Sunday, ends on a Saturday; each month has 26 weekdays, plus Sundays, and Christmas, the Fourth of July, etc., always fall on the same weekdays.

Such a calendar meets all the demands for orderliness. And the demands are great, even though they are abnormally soft spoken. Take, for example, the retail trade. The traditional measure of whether a store is doing well or badly is a comparison between sales this week and sales for the corresponding week of last year. Toward this end the Federal Reserve compiles weekly statistics to show how retail sales are running in comparison to the same period twelve months ago.

But in actual practice there is apt to be no reasonable comparison between a particular week this year and what passes for the same week of last year. The "same" weeks are certain either to start on different days or to be numbered differently. They are bound to be at varying distances from the first, middle and end of the month, with varying effects on retail sales. And if a wandering holiday is involved, they may be different weeks entirely from a business standpoint.

As a result, the larger department stores have their own calendars, as do some manufacturers. They are private calendars, used to make economic sense out of the present wall decorations. Useful as they may be, however, they are halfway measures—comparable to having a private system of telling time. The difference between the private and conventional calendars must always be taken into account, just as one must remember the difference between standard and daylight times when catching a summer train.

What the business man needs, of course, is official adoption of The World Calendar, which is the same—day for day, week for week, month for month—this year as last year or any other year. The retail traders need it, and anyone else who tries to conduct a rational business. But logic isn't likely to put The World Calendar across. That job requires people to stop being complaisant, and, instead, to do some hollering!

IN ADVERTISING, TIME IS MONEY

By E. S. Echlin, Toronto, Canada

AT a woman's club which I was addressing, a housewife suggested the other day that "if less money were spent on advertising, all goods would be cheaper in price." As best I could, I explained that probably the very opposite would be true—that advertising's part in telling the public about products for sale, and its place in mass production and competition, made it one of the great beneficent forces of all time.

Indeed, at the International Advertising Conference in London a year ago, advertising was given an additional role. The purpose of the great meeting, attended by over 2,800 delegates from 38 countries, was keynoted in the opening address by the Duke of Gloucester. His Royal Highness said: "You are to consider the task of advertising in a free world, and to remember that the most important part of your task is to keep that world free."

Money saved by all concerned in advertising, through more efficient methods of doing business and better handling of advertising's tools, helps every aim of the advertising profession. If the world is to be kept free, competitive and progressive, every business and every individual must be alert, aware of responsibility and also must contribute something tangible to the common pool for security.

Today, in these broader aspects which affect humanity and our future, The World Calendar definitely has a place. It offers a great opportunity to this age. In business it brings not only order and stability but actual savings in dollars and cents which show on the balance sheet. Joseph M. Naab, a prominent American industrialist, estimates that the whole of the interest on the national debt of the United States could be paid by the savings effected through calendar reform. Others may be inspired to write about The World Calendar in intimate relation to their own business; I shall indicate here a sample of its benefits to advertising agencies.

In demonstrating this I am using only one medium out of the dozens commonly used in advertising. For the moment we can forget about television, radio, billboards, streetcars, busses, magazines, handbills, direct mail leaflets and booklets, sky writing and posters in subways under the earth. Because everyone is familiar with them, let us take only the newspapers—the daily and weekly papers which unfailingly report to us the happenings of our harassed world.

In the United States and Canada we have about 2,000 daily newspapers and around 9,000 newspapers which appear once, twice or thrice weekly. While Canada's share of this is only 8 per cent, it follows the population ratio with reasonable closeness and of course there is great similarity in content.

These 11,000 publications all carry advertising, and a substantial part of this

is placed through advertising agencies. The agencies design the advertisements, prepare illustrations and put together the words in the ad best calculated to appeal widely to the public. A desired result is sales, more sales, mass production, competition, lower prices and profits based on volume.

The *Standard Advertising Register* lists 3,000 advertising agencies in the United States and 79 in Canada. These are large and small in size and large and small in volume of business. Some have hundreds of clients, a few have only from one to six clients each. But large or small, they have one thing in common—the system for ordering space in newspapers.

The order which goes to newspapers is prepared in quadruplicate on a 9 in. x 7 in. form which details position, number or heading of the advertisement, *date* of insertion, size of space and other relevant instructions. Every working day of the year about $2,000,000 worth of business is handed to newspapers on these forms.

Side by side with these in every advertising agency are their full brothers, the Cancellation Order forms. Similar in size but different in color, these serve the client who changes his mind, the agency which re-vamps the schedule, a bankruptcy which washes out an advertising contract or newspapers which change rates suddenly, merge with other papers or even make their own mistakes. Counting changes of plan which originate within agencies, the reasons for the Cancellation Order form are both innumerable and valid.

But for every one of these more or less unavoidable changes, there are 20 other cancellations through confusion over dates on which weekdays fall in our present disorderly calendar. Of course, these mistakes ought to be preventable—and, when the 12-month equal-quarter World Calendar is adopted, they will be prevented to a very great extent. In the meantime, despite unceasing vigilance, errors go on, and about seven out of every hundred orders are cancelled after being issued, solely because vice-presidents, account executives, order clerks, secretaries and typists put the wrong weekday on the right date and vice versa. This means a cancellation order, a new order and a new mailing.

In newspaper advertising the most important single factor, apart from the content of the ad, is the day-of-the-week on which the advertisement appears. Each weekday has its own customers and adherents and certain advertisements must be shown on certain specified weekdays—and on no other day.

For instance, accepted best days of the week for food advertising are Thursday and Friday. Automotive products go into Friday evening and Monday morning papers. Clothing, not being an "impulse item," has no particular day, but haberdashery generally is placed before Thursday. Financial, paint, drugs, hardware, pet food, beverages and a host of other products all have logical reasons for the weekdays on which their advertisements appear. Also there are illogical reasons, regional tangles and hunches which require careful handling. Thus, every order has to be checked to see that date and day correspond and are correct for the product.

Then, for the 9,000 weeklies and semi-weeklies, all orders must be double-checked. These fine public watchdogs come out on Mondays and Fridays, Wednesdays

and Saturdays, Tuesdays only or Tuesdays and Thursdays—any and all combinations are possible. Between checking and double-checking within the inner workings of advertising agencies, thousands of hours are needlessly lost and there still is a 7 per cent error. This latter is chargeable to the present mixture of weekdays and dates on the calendar, and to you and me and all the well-meaning workers around us.

On the basis that $600,000,000 each year spent for newspaper advertising involves writing 20,000,000 separate orders, and that it takes 30 seconds to check and 30 seconds to double-check each order for day, date and newspaper, we have a time loss of almost 50,000 days. However, even under The World Calendar orders would still have to be checked: but with dates and days in perpetual agreement. it could be done in one-third the time. Therefore, actual preventable loss because of our Gregorian calendar—about 33,000 days each year.

This sheer error-loss because of date and day confusion in the calendar is serious because it is largely preventable. In these cases both cancellation and a new order form with corrected date must be sent to the publication. The operation involves the handling of two sets of forms, each in quadruplicate, six carbons, de-filing, re-filing and a new mailing. The total time consumed is about 12 minutes and this, multiplied by 7 per cent of the total orders doomed as calendar cancellations, or 1,400,000, amounts to 40,000 days.

When these calendar-imperfection losses are added together, the figure assumes impressive proportions—73,000 days. This occurs each year and it is only a part of the whole loss, all of which comes out of the narrow margin of agency profit. To this loss must be added the errors concerned with dealing in all kinds of other transactions which depend on calendar accuracy. Magazines which close on the "last Thursday" of the month, trade papers which have to have all material by the "second Monday" and internal publications which appear the "first Wednesday" every second month. Other media which have curious closing dates, discount days for bills payable and receivable, and stated contract acceptances all have their own harvest of calendar mistakes.

No account here is taken of the trouble, anguish and money loss to the other end of our example—the newspapers. A frequent daily, frantic call to advertising agencies goes something like this:

"Hello, Mr. Fixit, this is the NEWS, Miss Blow, advertising, speaking."

"Yes, Miss Blow."

"You know your 155-line Better Babies ad. It's dated the 25th. That's a Wednesday and their stuff always comes out on Thursdays. That's the 26th. How about it? Have they changed?"

"No, no, Miss Blow, I'll check and call you back."

Mr. Fixit checks, calls back, issues a cancellation order, a new order with corrected date and day and "takes up" the error with the individual responsible. Naturally, he gets nowhere because anyone can make a mistake with dates and days on the calendar. They just don't match. Their irregularities are too much for the human mind to cope with, and the inevitable result is confusion and discord.

There was an illuminating report on this subject by the Newspaper Advertising Executives Association in 1946. It pointed out: "Newspapers are especially time and calendar conscious. So are transportation lines, communication systems, and radio. To us especially, but also to merchandisers, hotels and others concerned with seasons and holidays (and that includes not only business generally but everyone individually), it would be advantageous were the calendar to be the same every year, with holidays falling on the same day of the week and the same day of the month. Accountants and statisticians need such a basis for true comparative figures.

"As an illustration, take a year when Christmas came on a Friday: newspapers did not know how to plan their issues for the following Saturday. There was no accurate gauge by which to ascertain how many columns to anticipate; there was no certainty how many stores would be open Saturday. Wild guessing was the result—with the consequence that one metropolitan newspaper with a circulation of a million, discovered to its dismay that its advertising linage was off 65 per cent and that it had over-printed 80,000 newspapers. The modern world certainly needs a streamlined calendar for our streamlined age."

In all our efforts to chart a course by statistics, the defects of the present calendar create variables which range from one to 10 per cent. If a structural engineer permitted a deflection of one per cent in his calculations for the Empire State Building, the tip from vertical would be absurdly obvious to the man in the street. The top would be ten feet out of plumb. Such an error would not be permitted. Yet an advertising accountant, in submitting his reports to management, will have to admit errors of one per cent, two per cent and even as much as five per cent in his comparisons of quarters, months or other standard periods. The need of correcting these errors is just as acute as the need of keeping tall buildings to a precise perpendicular.

As far as advertising agencies are concerned, the very least estimate is that enough money could be saved under The World Calendar to provide every agency in the country with another man—free of charge. On newspaper advertising alone there is a loss of 73,000 days in time, and this leaves out every other type of advertising. The total amount which could be saved through adoption of The World Calendar runs into millions.

Among the mechanical gadgets found in every advertising office, none are more valued than those which are devoted to saving time. In fact, saving time amounts to a preoccupation of the modern world, if not an obsession. In every way, modern man is an intensely time-saving individual, and this is one reason for his rapid progress.

When the 12-month equal-quarter World Calendar is adopted I can see it installed as a decorative mural on the wall of every advertising agency in the land. There it will remain, in unchanging simplicity, and countless hours of extra work will be eliminated. Units of time will be coordinated properly and the business balance of days, weeks, months and years will be perfect. In wider spheres, the harmony out-flowing from this unending balance undoubtedly will play its part in helping to "keep the free world free."

WORLDSDAY—QUESTIONS ANSWERED

By Elisabeth Achelis

IN my mail and interviews over many years, almost every conceivable aspect of calendar reform has been discussed by earnest students of the subject. One of the matters that occasionally reappears is the position of Worldsday and Leapday in The World Calendar. Several letters on this topic have been received in the past few weeks, and it occurs to me that the time is here to say a few words about these variations of opinion.

It is natural that an inquiring mind should ask: Why is Worldsday placed at the end of the year?

Where else could it be placed? It is customary and reasonable to observe the consummation of a work or act at the end of its accomplishment. Yet, a Californian correspondent writes: "I think it might well be inserted at the end of February, in deference to the Roman tradition which put Leapday there." Another suggestion stems from the United Nations' desire to make its birthday the 24th of October a world holiday. A third proposal comes from Scotland, urging that Worldsday be observed at the year's beginning, ahead of 1 January, presumably dated 0 January.

One of the first letters I received on this subject came from England many years ago. It was a carefully reasoned argument for placing Worldsday in the mid-year:

> For any calculations in which one has to reckon the number of days that have expired between one date and another, it is desirable to have a consistent calendar. At present we have February beginning on the 32nd day of every year, but August may begin on the 212th or the 213th day. In the proposed World Calendar, this anomaly persists. It could be eliminated without the sacrifice of any of the virtues of the plan: all that is needed is to interchange the seasons at which the two special or extra days are inserted. Place Worldsday in every year at the end of June, between Saturday, 30 June, and Sunday, 1 July; and place Leap-Year Day at the end of December every fourth year. . . . Then every date in the year from 1 January to 30 December will recur with regularity in the same ordinal number. Is there any drawback to this proposal?

I can best reply that this suggestion, and others as well, have been repeatedly discussed and rejected by important international forums on calendar reform. Particularly the League of Nations, which devoted more than a decade to intensive examination of every possible phase of calendar revision. If, as suggested, the regular ordinal number of days without a break is of greater importance than the continuous succession of the quarter-years, then the placing of the annual Worldsday in midyear has value. However, a midsummer intercalation every year would increase by one day the conversion of dates of a large number of dates in the year. By placing the Worldsday at the closing of every year the continuous unbroken sequence of the quarter-years in the calendar is maintained.

It is understandable, of course, that a patriotic Canadian might suggest Dominion Day as a suitable location for the calendar's new world holiday, just as some Americans might like the idea of combining it with their own Independence Day. But such proposals fall quickly by the wayside, because they lack the international character required for joint observance throughout the world. Any consideration of various national holidays and seasonal anniversaries (such as Midsummer Day, a holiday observed in several countries) as the basis for the annual Worldsday would cause so much confusion and rivalry that a solution would become almost impossible. In short, the scientific method of placing the 365th day at the end of the year is logical.

The idea of Worldsday goes back to the Roman Catholic Àbbé Mastrofini, who launched it with two Imprimaturs in the year 1834. He recommended "that the 365th day be considered as an extra day and placed between two weeks as a supplementary day belonging to the outgoing year." He called it an "eighth day" in the last week of the old year. His ingenious idea was presumably inspired by the extra 50th day of the old Hebrew "pentecontad" calendar, a system which, as mentioned in the Old Testament, had a 50th "special day" to seal a 49-day sequence of seven weeks with seven Sabbaths.

Mastrofini suggested that this "stabilizing day" (now known as Worldsday) should come at the *end* of the year. His suggestion has been followed and approved by international authorities ever since that time.

The League of Nations disapproved a mid-year Worldsday for several reasons. One of the most logical of these was that a mid-year Worldsday would mean an *extra* holiday, whereas the year-end Worldsday naturally takes the place of the almost universally observed New Year's Day.

The intangible values of this stabilizing day are summed up by one of my recent correspondents: "The 365th Worldsday has been likened to a key that securely locks the annual year-book ready to be placed for reference on the archive shelves of history. There is a vast spiritual, psychological and idealistic significance in the observance of the annual world holiday on the last and closing day of the year, because it bestows a benediction upon both the outgoing and the incoming years and, as a universal holiday, it offers a common ground of fellowship for all nations, peoples and races to meet in a united heritage of brotherhood."

Obviously the observance of Worldsday will vary. Some will wish to dedicate it to worship, praise and prayer; others to the secular promotion of world friendship, cooperation and peace; still others for recreational purposes such as sport, drama or general entertainment. Whatever the manner of observance, Worldsday will be a modern pioneer of spiritual significance, blazing a new trail that will lead mankind forward and onward to better days.

The necessary 366th day in leap year, essential for keeping the calendar in step with the seasons, must not be overlooked. Some of my correspondents suggest that it also be placed at the end of the year, making a double world holiday. The approved arrangement of Leapday at the end of the second quarter in leap years seems to most qualified authorities the correct and reasonable solution.

ELEMENTS OF TIME MEASUREMENT

From a Monograph Prepared by the Staff of the Adler Planetarium, Chicago

MANY different kinds of calendars have been used in the past, and several different types are in use at the present time. All of them are astronomical in their origin; that is, the units of time which they employ are derived from astronomical motions—the motions of the earth and the moon. The turning of the earth on its axis gives us our fundamental unit of time, the day. The annual revolution of the earth around the sun, which is one of the causes of the seasons, gives us another period, the year. The revolution of the moon around the earth and the resulting phases of the moon give us a third, the month, and a fourth, the week. The history of the calendar is the story of man's attempts to fit these various units together in such a way as to provide the most practical and useful calendar.

These units of time differ from the various units in other systems of measurement in a fundamental way. They are natural units whose value cannot be changed at will to make them fit as we please. Thus we have exactly 12 inches in a foot with no fractions left over, exactly 16 ounces in one pound, and exactly 100 cents in a dollar. We could change any of these relationships at will by passing appropriate laws and regulations. The number of inches in a foot could be changed to ten or any other number. But we cannot change the number of days in a lunar month; that is, the number of days required for the moon to go once through its phases; nor the number of days in a year; nor the number of lunar months in a year.

It has been noted that the early Christian calendar had no week, nor names for the weekdays. The week with its day names was introduced in 321 A.D. by the Emperor Constantine, who was converted to Christianity in 312. In 325 Christianity became the state religion of Rome.

Among the ancient peoples there were weeks of various lengths ranging from five to ten days. The week adopted by Constantine, which has come down to us, was that of the Jews, who in turn had inherited it from the Babylonians.

The origin of this seven-day week has been lost. Perhaps it came from the moon, whose four principal phases occur at intervals of seven days. Perhaps it came from the seven ancient planets, among which were included the sun and moon. Certainly the names of the seven days were derived from these bodies.

Babylonians practiced, and perhaps originated, astrology. They believed that the planets somehow controlled the affairs of men, a superstition which unfortunately has never since been shaken off.

What of the future of our calendar, particularly with respect to changes which may be made within our lifetime? From the point of view of the business world, the calendar is still capable of con-

siderable improvement. An ordinary year consists of 52 weeks and one day over, so that the weeks do not fit each year in the same way, giving seven different arrangements. If we consider leap years also, the number of arrangements increases to fourteen. These fourteen different kinds of years or calendars follow each other in a long cycle.

Another defect of our calendar is that the two "halves" (six months periods) are not equal to each other, nor are the four "quarters" (three months periods) equal to each other. The individual quarters contain either 90, 91 or 92 days. Because of the shifting weeks, the number of working days is unevenly distributed among the months, ranging from 24 to 27.

To correct these defects, a revision of the calendar has been suggested whereby each year would start on a Sunday and would be exactly like every other year. The extra day necessary to bring the length of the year to 365 days would be taken care of according to a suggestion made in 1834 by the Italian Abbé Mastrofini. This day would be placed at the end of the year, after the last day of December and before the first day of January, and might be called Worldsday, as an international holiday. Any new calendar must include this feature, otherwise the benefits to be gained would not offset the trouble of making the change.

In The World Calendar, six months of the present calendar remain unchanged. There are slight changes in the others, involving the shifting of only eight days.

This calendar has the approval of science and business, educators and churchmen. Several national governments have approved it, and it seems to be well on its way to eventual adoption.

HISTORY'S MISSING DAYS

London Courier

TODAY we are still experiencing the results of a daylight robbery which took place 200 years ago when a British politician and two scientists, with shock tactics, removed eleven days from the calendar. It was in fact a reform which was much overdue —as some hold that further calendar reform is overdue again today.

This year, 1952, then marks the bicentenary of one of the strangest things ever done by any Parliament in history: the complete blotting-out of eleven days. The famous *Gentleman's Magazine* for September 1752 printed a letter from a perplexed reader: "I desire some way of setting my affairs to rights, or I believe I shall run mad. I went to bed last night, it was Wednesday, September 2, and the first thing I cast my eye upon this morning at the top of my paper was Thursday, September 14. Have I slept away eleven days in seven hours, or how is it? For my part, I don't find I'm more refreshed than after a common night's sleep. They tell me there's an Act of Parliament for this. . . . But look at the difficulties it has caused! Our King, who was in Hanover, has been robbed of eleven days in his German dominions; some of the Saints have lost their days; I, myself, have lost a birthday—and a wife.

"The loss of a wife requires explaining. I have solicited the most amiable of her sex these five weeks. She fixed the day for the tenth of September and gave a bond of 10.000 pounds for performance. That day has disappeared, and my lawyer says my ten thousand are not worth tuppence. A fine affair, that a man must be cheated out of his wife by a parcel of mackematicians and almanack makers before he has her. A new sort of divorce, truly!"

EXCERPTS AND REVIEWS

Ugo's Work Needs Revision

By Lawrence P. Jennings

(In Bulletin of National Association of Cost Accountants)

So far as I know, Ugo Buoncompagni was neither an accountant nor a business man. Yet, as Pope Gregory XIII, he created one of the most obstinate problems faced by members of the accounting profession, through the establishment of the Gregorian calendar.

This calendar, under which we still record the passage of the year's time, contains many obvious defects from the standpoint of going-concern accounting. Adjustments must be made if operating reports prepared for top management are to contain information immediately usable for comparison and control purposes.

Probably the most obvious defect is the variation in the number of days in each month. A 31-day January followed by a 28-day February can be particularly vexing to the accountant who must prepare comparative production reports, sales reports or controllable cost reports. Not only must some adjustment be made for the difference between the total number of days in each month, but further adjustment must be made for the difference in the number of working days in each month. Other defects which might be noted include the fact that quarterly reports require similar adjustments, and special problems exist in the handling of legal holidays.

Fortunately the calendar problem is not insoluble. One of the most widely applied solutions to the problems imposed by the Gregorian calendar is the 13-period accounting year, which has been used for many years by some business concerns. However, the Gregorian pattern cannot be disposed of without making allowance for the 365th day of the year.

The World Calendar might well be considered at this point. It very neatly disposes of the extra day or days (depending upon whether the year is "ordinary" or a leap year) by classifying them as legal holidays not connected with any particular week.

Admittedly The World Calendar if universally adopted would solve all of the problems encountered in connection with the Gregorian calendar except the irregular incidence of legal holidays. However, the campaign for such a calendar is now in its 22d year, and has not yet reached the legislative stage.

Objection Withdrawn

By Will Cuppy

(From the humorist's posthumous book, "How to Get from January to December," published by Henry Holt & Co., New York)

I DON'T seem to have heard whether anything has been done lately about reforming the calendar. The plan, you know, was to fix the calendar so that weekdays would fall on the same month-date every year, if that's the way to put it. For instance, 6 June would fall on Wednesday, instead of Thursday, as it did in 1935, or Tuesday, as in 1933, or Sunday, as in 1875. This can be done by giving March, May, August and December only 30 days each, instead of 31, adding one day to April, stabilizing February at 30, having a thing called Worldsday between 30 December and 1 January, and another thing called Leapyear Day right after 30 June when necessary, namely every four years. It might be fun.

There will be trouble, I'll bet, from people whose birthdays occur on 31 March, 31 May or 31 August, because there won't be any

such dates any more. And, those born 31 December will just have to celebrate on Worldsday and like it.

All in all, I withdraw any objections I may have made to calendar reform in the past. It really looks as though it might provide a rational method of telling what day it is without going down cellar and crabbing through a lot of old newspapers—which generally leaves you about where you were,

Improving Time Measures

By SETH MOSELEY, 2D

THERE are backward minds who maintain that no improvement in the calendar is necessary. Aren't they aware that change and progress are a vital part of the whole pattern of an advancing civilization?

Do they object to any change in the old-fashioned methods of measuring time by clocks and watches? Until about 1930, high-precision clocks were the accepted method of measuring hours, minutes and seconds. But the highest accuracy obtainable from such clocks as the Riefler and the Shortt was about one-hundredth of a second per day from perfection.

That wasn't good enough. So scientists introduced the vibrations of quartz crystals, which were originally used as a means of electricity control. This gave accuracy to better than 1 part in 100 million. Today such crystals are used at many observatories for broadcasting time signals.

If such improvements in the minutiae of time measurement are desirable, it is obvious that we ought not to delay any longer in getting an improvement in the broader phases of time measurement, as represented by our antiquated calendar.

A negative attitude regarding calendar revision can hardly be justified, in the face of endorsements by numerous important organizations, such as the National Education Association, the American Association for the Advancement of Science, the American Institute of Accountants, the International Astronomical Union and many leading business organizations.

Bi-Centennial Year

By ELISABETH ACHELIS
(In Los Angeles Times)

THIS leap year, 1952, marks the 200th birthday of our calendar. It was in 1752 that the English-speaking world adopted the Gregorian calendar. By act of Parliament, England and her American colonies belatedly embraced the reform which Pope Gregory XIII had initiated in 1582 and which had been adopted by a majority of European nations.

But not by the conservative British. For 170 years they continued out of step with Europe until at long last they yielded to scientific facts and practical needs.

This meant that 11 days had to be dropped out of the year 1752, which caused some curious complications in English and American chronology.

The change was made when George Washington was just reaching man's estate. He was born 11 February 1731—under the old calendar which began the year on 25 March. The new calendar switched this date to 22 February 1732. Washington had the unusual experience throughout his lifetime of observing two birthdays. His Virginia neighbors always provided a festive occasion on 11 February, but birthday dinners given him in Boston, New York and New Haven at various times were on 22 February.

This 200th anniversary of the calendar is especially significant because it marks a peak effort in the United Nations for a further revision of the calendar. The current proposal is for approval of The World Calendar by the United Nations in 1952, with a view to installing the new system internationally in 1956, when both the present Gregorian and the proposed World Calendars coincide.

By a coincidence the English-speaking world is again laggard. Neither England nor America has as yet registered approval of the proposed change at the United Nations, although 17 other nations are supporting it.

RECENT CALENDAR RESEARCH

Tomorrow's Time System

By Curt B. Beck

(Several readers have asked for the text of an endorsement of The World Calendar by the editors of the Engineering News, published by the Massachusetts Institute of Technology. It was printed some time ago, when Mr. Beck was Editor-in-Chief of the magazine, under the title "Engineering News Endorses The World Calendar." It included a historical survey and the following summary of current application.)

CALENDAR reform, if adopted, will contribute much to human comfort and orderly living. The World Calendar has as its basis good common sense backed by a long-needed rectification in our method of counting our days.

Faults of the Gregorian calendar are obvious and numerous. The main objection to it is its complete lack of organization and its incongruity. One can never tell the number of days in a month, the date a certain day will fall on, or the day a holiday will fall on—without a complicated recital of Elizabethan rhymes, counting on the fingers, or consultation of a calendar. Every year is different from every other year, and holidays switch around in different years like grasshoppers. In this day of precise measurements, planned time, and the eternal struggle for maximum efficiency, the old calendar is out of place.

The high point of The World Calendar is, of course, that it offers a solution to nearly all of the bad points of the Gregorian. Its main virtue is its simplicity; it offers ease of adoption combined with a modicum of changes.

The group profiting most by the new arrangement will be business men. They suffer the most of any occupation from the vagaries of our method of indicating our position in the solar orbit. A system which makes every day of every month the same over a period of years will greatly simplify planning for future sales, something which merchants have to leave to judgment and chance at present. No longer will the business man have to compare a five-Saturday November (as in 1952) with a four-Saturday November (as in 1951) and be required to judge sales by such comparison.

But the business man is not the only one who will benefit by calendar reform. With all days the same, holidays can be put either on a Monday or a Friday, thus incorporating them into the week-end, and avoiding costly midweek shutdowns. Another important improvement is the four quarters into which the year would be divided, which will greatly simplify methods of accounting.

Government officials and lawyers will also benefit by the new plan. The data upon which all government agencies base their policies will be easily comparable to former years' figures, thus rendering the formulation of future decisions much simpler. The obvious benefit to those concerned with laws, contracts, legal dates, etc., scarcely need be mentioned. The division of the year into unequal quarters has long been a thorn in the side of all those engaged in any legislative or legal activities. Summing up, the legal profession is one of which the very nature depends upon accuracy, conciseness, and an absolute maximum of coordination and efficiency, all of which the well-ordered World Calendar will provide.

In the world of finance the same benefits apply as do to law. The equal-quarter modification is especially attractive, since it will equalize the period of loans, usually computed on a quarterly basis. In the case of statisticians, the use of graphs will be greatly simplified and the graphs themselves will be much more significant, since every period is comparable with the corresponding period of any other year.

The 12-month equal-quarter plan has the approval of scientists. For, as a result of actual consideration by international commissions and scientific bodies, science has shown overwhelming favor for this method of revision. Professor Harlan T. Stetson,

while he was in charge of the Cosmic Terrestrial Research Laboratory at M.I.T., was one of the many scientists who endorsed the plan and who believed actively in it. Professor Stetson was Secretary of the American Association for the Advancement of Science when this body passed unanimously a resolution for the adoption of The World Calendar. President Compton of M.I.T. was also President of the A.A.A.S. at the time. Beside the approval of the A.A.A.S., this plan has been approved by a committee of international scientists and by several American scientific and technical societies.

The only hindrance at present to the adoption of The World Calendar is the general feeling of apathy to such a change which world powers like Great Britain and the United States bear. Seventeen other countries, including China, Norway, Turkey, Greece, Mexico, and Brazil, have signified their endorsement of the proposal. But it is still up to one of the larger world powers to start the ball rolling.

Once the apathy to change and the conservatism so prevalent among diplomats are broken down, calendar reform will get under way. It is a certainty that such a change is coming, for our old calendar has proved itself unsatisfactory for many centuries. Revision is a necessity for the better world towards which mankind is eternally striving.

Sound Reason for Change

By Josephine Halpin
(Radio Commentator, WINS, New York City)

If you think that calendar revision is just another will-o-the-wisp, remember it is being pushed by The World Calendar Association, an organization with 10,000 members, including some of the most prominent people in the scientific, business and political world.

This is an international crusade, with affiliated committees and societies in over 30 countries. The World Calendar Association is 21 years old, and the cause to which it is devoted has been agitated for more than a century—ever since an Italian priest named Abbé Mastrofini launched a plan to make the Gregorian calendar a perpetual and invariable system of measurement by taking the last day of the year out of the weekday sequence.

Right now the idea is up before the United Nations. Secretary-General Trygve Lie has issued a formal and exhaustive study of its merits. More than a dozen member nations have endorsed it.

Holidays will be stabilized, and eventually all holidays will come on Monday, preventing interruptions in the week which are now constantly occurring. Economists figure that the stop-and-go of our present system of midweek holidays costs us billions of dollars yearly. The new plan, they say, will save us enough money to pay the interest on the national debt. That's one of many reasons for improving the calendar.

High Hopes for 1956

By Bud Guest
(Radio Commentator, WJR, Detroit, Mich.)

Agitation for calendar revision has been sputtering and flaring for the past 120 years. But the world has had a lot of other things to worry about, and the nice new calendar plan has not yet been adopted.

It got as far as first base early in the present century, when Switzerland prepared a draft treaty for submission to all the nations of the world. This would probably have gone through, if it hadn't been submerged in the international quarrels which led to World War I.

When the war was over, the League of Nations took up calendar reform, and was making good headway when World War II came along. The League's proposals were slapped on the shelf and forgotten.

Now the United Nations has revived the agitation. But world tensions are so great that the UN finds the path difficult.

If things will only quiet down a bit for a couple of years, calendar revision may be expected to get somewhere in 1956.

FROM THE MAIL BAG

Compared with the important matters now confronting the United States and the United Nations, calendar reform is of minor importance. But I think our delegation is making a mistake in opposing early consideration of calendar reform, because the more minor things can be agreed upon the more firmly does the UN become established as an agency for international action.—Max O. Lorenz, Mountain View, Cal.

Everywhere the world is changing rapidly, which is a situation favorable to The World Calendar. Our committee looks forward confidently to a time when this proposal is approved by all countries, and we are confident that this time is not far distant.—S. Imoto, Osaka, Japan.

For a month we have made the calendar the subject of our planetarium shows. Near the end of each show we stressed the advantages of The World Calendar and expressed confidence that it would be adopted soon.—Dr. Dinsmore Alter, Director, Griffith Observatory, Los Angeles.

It will unquestionably be for the good of the world to have the new calendar.—R. M. Desmukh, Amraoti, India.

Our ninth grade students show a keen interest in calendar revision.—Robt. McCullough, Schenectady, N. Y.

By sweeping away the existing eccentricities of the calendar, the proposed new system will give us the most perfect calendar in history.—Sam Bate, Cheltenham, England.

Irregularities of the present calendar add hours of work to every department of the insurance business.—A. C. Patton, Actuary, Worcester, Mass.

Business men have long needed a revision of our present unsatisfactory calendar. The World Calendar will solve our problems in connection with the many adjustments now necessary to get even approximate statistical comparisons—such as the artificial 4-5-4 periods or the 13-month accounting system, which never quite coincide with the actual facts and are never quite satisfactory.—E. C. Stephenson, Vice-President, J. L. Hudson Co., Detroit.

You are well aware with what interest and good will I have been following your efforts in this enterprise, and adding my modest cooperation to it.—Jorge Alvarez Lleras, Astronomical Observ., Bogota, Colombia.

Having studied your *Journal* in the Payyanur Public Library, I am translating some of the important articles into Malayalam, my own mother tongue. Only in their own language can people understand the real need for a new calendar.—V. K. K. Nayanar, Payyanur, South India.

Advocates of calendar reform are doing an important work in a new approach to a scientific system of universal record keeping.—Martin Kafka, Forest Hills, N. Y.

Work for a new calendar is world embracing and will contribute mightily to the universal peace which all people ardently desire.—H. Kaltenbach, Herne, Germany.

There is no doubt that The World Calendar definitely simplifies office operation, manufacturing routine, industrial records, educational planning and all types of commercial endeavor.—E. C. Rayner, Publisher, New York City.

We ardently hope that the movement for calendar reform will soon achieve its happy fulfillment.—Rev. Valentino Panzarasa, Torino, Italy.

Revision of the calendar seems like a great step forward for the whole world.—T. F. Slasor, Jr., Columbus, O.

Benefits resulting from calendar revision will greatly outweigh any temporary inconveniences involved in the change.—Prof. Eugene Borel, Geneva, Switzerland.

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GUATEMALA: The World Calendar Association, International, Affiliate, Don Manuel Eduardo Rodriguez, Chairman, Diario "El Imparcial," Guatemala.

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YUGOSLAVIA: Yugoslavian Committee on Calendar Reform. (The Committee is at present without a Chairman due to the death of Mr. George Curcin.)

EDITORIAL PARAGRAPHS

One of the most practical methods to improve milk sales is to provide an incentive for each route salesman to increase his business by one per cent over the previous month's sales. The drawback of such a system under the present calendar is that months have anywhere from 28 to 31 days. This unreasonable irregularity will be remedied in The World Calendar.—*Milk Dealer, York, Pa.*

Elements of disturbance occur frequently in modern statistics because of calendar defects and irregularities. The French Government has set up a committee to study these problems. Its latest report demonstrates the inconveniences of the present system and the advantages of The World Calendar.—*Journal, Mamers, France.*

At the United Nations, nobody has yet officially vetoed the new World Calendar plan—not even Russia's Andrei Gromyko. —*Chicago Sun-Times.*

Our present calendar, in spite of repeated adjustments in past centuries, is still afflicted with certain defects, some of which have gradually become grave enough to merit serious study with a view to remedying them.—*Jeunesse Ouvrière, Paris.*

This World Calendar would have been adopted long before this except for mankind's inexplicable reluctance to forsake the old for something better. — *Mason City (Iowa) Globe-Gazette.*

Civilized man regulates his life so firmly by the calendar that it becomes to him part of the settled order of things. He seldom reflects that the particular calendar by which he lives is not the only possible one; and any idea of change or reform comes to him as a shock.—*London Times.*

How much longer will the world tolerate its absurd, unreasonable calendar, one that not only hinders the efficiency of business and industry but also brings inconveniences and disorders to all our administrative, social and domestic activities?—*Emancipator, San Antonio, Tex.*

Confusions and uncertainties in economic relations are caused by the irregularities of the present calendar. Many statistical problems are made very intricate, especially those arising out of commercial and industrial affairs.—*Sapere, Rome.*

Logic and utility are on the side of calendar revision. The standard present-day calendar doesn't satisfy. Although it records time accurately enough, the constant shifting of the dates and weekdays from year to year annoys those with precise mathematical minds.—*Anniston (Ala.) Star.*

For the past century the idea of a calendar at once exact, invariable and universally adopted has made steady progress.—*Revue Apologétique, Paris.*

Everybody would benefit by adoption of The World Calendar.—*Gloucester (Mass.) Times.*

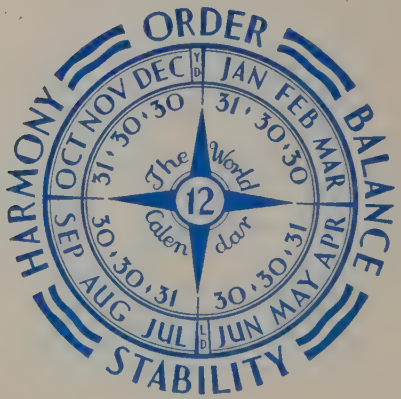
Millions of people throughout the world use the Mohammedan calendar, which follows the moon and has a year of 354 days. An Arab who tells you that his age is 34 years is in reality only 33 years old by our calendar.—*Sciences et Avenir, Paris.*

Numerous organizations, including the National Education Association, have recommended adoption of The World Calendar in 1956.—*Rock Hill (S.C.) Herald.*

Revision of the calendar is no more difficult than was the adoption of Standard Time.—*Pueblo, Buenos Aires.*

Many important advantages are offered by a new calendar—uniform, convenient and practical. Our present calendar is an instrument of confusion. — *Huntington (Cal.) Signal.*

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



After reading please pass on to others.

OAKLAND SCIENCE & INDUSTRY

Journal of CALENDAR REFORM

SALUTE TO UN PRESIDENT

December 1952

THE WORLD CALENDAR

1ST QUARTER

JANUARY						
S	M	T	W	T	F	S
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3RD QUARTER

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4TH QUARTER

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Worldsday, (a World Holiday), W or 31 December (365th day), follows 30 December every year.
The Leapyear Day, (another World Holiday), W or 31 June follows 30 June in leap years.

In this Improved Calendar:

- **Every year is the same.**
- **The quarters are equal: each quarter has exactly 91 days, 13 weeks or 3 months; the four quarters are identical in form.**
- **Each month has 26 weekdays, plus Sundays.**
- **Each year begins on Sunday, 1 January; each working year begins on Monday, 2 January.**
- **Each quarter begins on Sunday, ends on Saturday.**
- **The calendar is stabilized and perpetual, by ending the year with a 365th day that follows 30 December each year, called Worldsday dated "W" or 31 December, a year-end world holiday. Leap-year day is similarly added at the end of the second quarter, called Leapyear Day dated "W" or 31 June, another world holiday in leap years.**



ONE WORLD CALENDAR FOR ONE WORLD

VOL. XXII DECEMBER 1952 No. 4

IN the new and unique meeting hall of the United Nations, the current session of the Assembly has been impressive because of the keen interest and devotion displayed by the delegates of sixty nations. Subjects of vast moment to the peace of the world are being discussed with a spirit of good fellowship and wise statesmanship—despite the fact that many of them involve the most delicate problems of extreme nationalism and highly diversified policies.

Representatives of The World Calendar Association, including both the American and the British organizations, have been in touch with many of the delegates and received their friendly advice and counsel—particularly those of Uruguay, Panama, Peru, India and Canada. We also had the cordial cooperation of several members of the UN Secretariat, in seeking to clear the way for submitting calendar reform for the approval of world governments.

We were especially impressed with the leading role which Canada and India are playing in the sessions of the Assembly. India has ambitiously assumed a position of voluntary leadership in adjustments and compromises that are lending fresh hope to peaceful settlement of the world's knottiest problems. India has also taken, for the first time, a stand in favor of calendar reform.

Canada supplied one of its ablest men to occupy the presidential chair at the Assembly. Lester Bowles Pearson is proving an excellent President, commanding the respect and regard of all the delegates and observers. He and his country are to be congratulated for his warm, forceful and influential leadership.

That he is a friend of calendar reform is well known. A few days before the opening of the UN Assembly, James Avery Joyce (Honorary Secretary of the British calendar committee) was in Canada and had the pleasure of a meeting with Mr. Pearson at the Canadian Parliament Building in Ottawa. On the subject of Mr. Joyce's visit, the Canadian Foreign Secretary said:

"Calendar reform is one of the sensible things which the world ought to be doing, but the world is not doing it because it is doing so many un-sensible things!"

Mr. Joyce's program, in the main cities of Eastern Canada, was arranged in cooperation with Chairman Arthur J. Hills of the Canadian World Calendar Associa-

tion, and was highlighted by informal conversations with other leading figures in Canadian public affairs. Returning to New York City, to be present at the opening meetings of the United Nations General Assembly, the British Secretary again saw Mr. Lester Pearson—now President of this most momentous gathering of many nations. In his report to his London committee, Mr. Joyce quoted the Pearson statement and added:

"The World Calendar plan has been the subject of expert investigation for over thirty years. Following a good deal of careful research and discussion carried out under the old League of Nations—when 17 governments and a considerable body of scientific and business opinion came out in favor of it—the question has, since World War II, been waiting patiently in the long queue of 'sensible things' for inclusion on the agenda of either the UN General Assembly or its Economic and Social Council.

"Unfortunately, when the item was discussed three years ago for inclusion on the agenda, it was postponed for more urgent business—but the hand of Mr. Lester Pearson was raised in its favor."

In the current sessions of the Assembly, a great deal of quiet discussion of calendar reform has been going on in corridors and committee rooms. Canada has indicated its willingness to cooperate with any group which will undertake to bring the subject forward for definite action. It has seemed that something like a united front might be established by Canada, India and the South American countries. Such a joint partnership of East and West—a combine of Occident and Orient—would be welcomed by all friends of the UN as embodying the deeper principles underlying its original conception.

NEWS BULLETINS

BUENOS AIRES.—Señor Guillermo Mascarenhas of the Faculty of Economic Sciences at Buenos Aires University has succeeded his deceased father-in-law, Admiral José Guisasola, as chairman of the Argentine Affiliate of The World Calendar Association. The Admiral, who was formerly Chief of Staff of the Argentine Navy, died on 14 July.

STOCKHOLM—Professor Knut Lundmark, Director of the Lund Observatory and a long-time supporter of The World Calendar, has returned from a four-months sojourn of study at the Mount Palomar Observatory in California. This was his sixth American trip, in connection with his 30-year analysis of 700 milky-way systems. His interest in calendar reform came by way of the late Professor Svante Arrhenius, Nobel prize winner who was one of the founders of the modern science of chemistry. The last public appearance of Arrhenius was a formal presentation of The World Calendar before the Swedish Astronomical Society, which Lundmark translated into English for the international archives. [See Summary of Arrehenius statement on page 150.]

NEW YORK.—The "Calendar Contrast Cards," which have been issued annually for several years by The World Calendar Association, are again available in quantity for distribution. The 1953 issue is printed in green and blue, 2½ by 3½ inches, showing the calendar for the new year as contrasted with the perpetual World Calendar. A supply of these cards for your personal use will be sent on request.

Journal of

CALENDAR REFORM

DECEMBER 1952

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It's a LONG ROAD to WORLD ACTION

Editorial in Los Angeles Times, 23 November 1952

NOW here is something the United Nations could do to improve this imperfect world; nothing global, impractical nor expensive—just getting everybody to agree on a workable calendar revision.

You get some idea of the pitfalls of seeking international conformity from the fact that the idea, centuries old, was put up to the League of Nations in 1923. By 1937 the League polled member nations on adoption of The World Calendar (now conceded to be the best of a myriad of revisions) and only 14 were ready to accept it. Six nations were opposed and 25 had not made up their minds.

Most of the world now regulates its official and commercial dating by the Gregorian calendar, which Pope Gregory XIII instituted in 1582 to correct the older Julian calendar, dating from Julius Caesar. The English and their colonies held out until 1752, however, when 11 days had to be dropped to get in step with the rest of Europe. Some Eastern Orthodox peoples continue to use the Julian reckoning and Islamic nations follow a lunar system decreed by Mohammed in fixing religious dates.

It took the American Revolution to initiate a decimal system of money, and the French Revolution to introduce a decimal system of weights and measures. Now India, which inherited the Gregorian calendar from the British and a host of other calendars from her native astrologers, is considering the step of being the first to adopt The World Calendar.

The most radical change contemplated by The World Calendar is to move Leap-Year Day from 29 February to 31 June, making it a quadrennial world holiday. Another world holiday would occur at the end of every year, between 30 December and 1 January.

As can be seen in the accompanying cut [inside front cover], The World Calendar does not change the Gregorian method of resolving the discrepancy between a year (a complete circuit of the Earth about the Sun) and a day (one complete turn of Earth on its axis). The same calendar would be used every year.

It does change the length of months, making each quarter consist of one 31-day month followed by two 30-day months. Each equal quarter starts on a Sunday; the second month in each quarter starts on Wednesday, and the third month in each quarter starts on Friday and ends on Saturday.

By a little legislative rearrangement, all public holidays could be moved to fall either on Monday or Friday, permitting an unbroken long week-end for most workers. Religious holidays could likewise be accommodated to the new calendar, as they have been in earlier calendar changes, by those concerned. No date in The World Calendar is more than two days earlier or later, with respect to 1 January, than the same date now.

In fact, there are only seven dates which would fall in different relative positions under The World Calendar providing the transition from the present Gregorian system were made in a year when 1 January falls on a Sunday in both calendars. This occurs 1 January 1956.

The benefits to business, which could keep accurate and comparable monthly and quarterly records (many businesses already use a standard four-week pay period, ignoring the irregular months), and to employees in terms of holiday convenience are immediately apparent. In fact, it is difficult to imagine anyone objecting to the change, possibly excepting the calendar printers, whose wares depend on pictorial interest in most cases.

The Gregorian calendar, which we now use, approximates so closely the actual length of a solar year that one day's error will not accumulate until 3,323 years, which worries only the astronomers. But it has many defects: months vary from 28 to 31 days in length, quarter and half-years vary from 90 to 92 and from 181 to 184 days, and there is no consistency between dates and days of the week from week to week, month to month or year to year. The number of working days (weekdays) varies from 24 to 27 per month, and past and future days and dates can only be calculated by complicated mathematics.

AWAKENING INTEREST IN SWEDEN

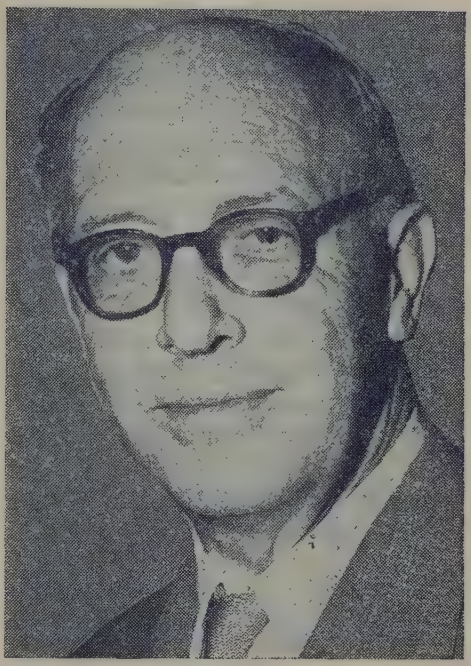
By Hilding Törnebohm
Director of the Swedish Ball Bearing Co. (SKF); President of the International Standardization Organization (ISO)

DURING my American visit this summer, as a delegate to the triennial Congress of the International Organization for Standardization (ISO), I became acquainted with a movement hitherto unknown to me—the world-wide campaign for a standardization of the Gregorian calendar.

The movement centers in New York City at the headquarters of The World Calendar Association, which is constantly in touch with the United Nations as the official body to take legislative action whenever calendar reform is enacted on a universal basis.

Inasmuch as the ISO is recognized by the UN as the paramount authority in matters of standardization, it was natural for The World Calendar Association to seek a closer contact with ISO at the triennial Congress. Such a contact was facilitated by the fact that the incumbent President of ISO, M. Albert Caquot of France, had long been an ardent advocate of calendar reform, and had enthusiastically supported it in the French standardization body (AFNOR), where a special committee has recommended The World Calendar for adoption by France.

Recognizing this long-standing friendship, The World Calendar Association gave a luncheon in honor of M. Caquot, to which all ISO delegates were invited. Thirty-three countries were represented,



Dr. Törnebohm

and illuminating addresses were made by M. Caquot and by representatives of The World Calendar Association.

This was my introduction to calendar reform. A few days later I was elected M. Caquot's successor in the presidency of ISO, and I considered it my duty to study further the subject which had so keenly engaged his great talents.

I may say that I found the project for improving the calendar thoroughly worth

while. It merits the consideration of a wider public.

I regret that I cannot follow M. Caquot's example by putting this excellent project before the standardization group in my own country. It happens that the Swedish Standards Commission is strictly limited under its charter to items directly connected with industrial production. Calendar reform must therefore go straight to our Parliament for action.

Thus far, the Swedish government has not shown much interest in calendar reform. Among the Scandinavian countries, Norway is the only one which has registered its support with the United Nations. However, many prominent Swedish citizens have been supporters of the proposed change—notably our great scientist, Svante Arrhenius, who shortly before his death made an address on the subject to an audience of Swedish astronomers.*

The most important reason why we in Sweden should not any longer neglect consideration of this matter is that 17 other countries have already indicated their support of calendar reform, and if the world at large accepts the change, Sweden neither can nor should stay out of the picture. International communications would be seriously hampered if various countries tried to use different time-systems.

There can be no doubt that strong forces are in motion to secure the adoption of the proposed new calendar within a few years. The Swedish people should be aware of this fact, and should inform themselves fully on the merits of the subject.

* * *

Our present calendar is basically that installed by Julius Caesar (who derived

---

* *Extracts from Arrhenius Address:* "As might be expected, objections have been raised against the proposed reform of the calendar. It certainly is a good principle not to give up any old scheme before it has been proved that the new one is better. But the reform which I advocate, The World Calendar, aims at restoring the lost uniformity in our calendar, which it possessed under Julius Caesar, and at improving the system very conservatively in certain other respects.

"The most important of these changes is that which eliminates the wandering character of the weekdays, so that a certain day of the week will hereafter always fall on the same day of the month. Next in importance is the rearrangement of the lengths of the months producing equal quarters.

"Perhaps the most important argument brought up against this proposal is that 'the reform involves such small changes that it is hardly worth the trouble of enacting it.' But such an argument is not very plausible. How much labor our present calendar irregularities cause us may be illustrated by the time and effort which all mankind puts into teaching and learning the verse, Thirty days hath September, etc. Every one of us has lifelong trouble in remembering and applying this verse correctly—or incorrectly.

"To me, also, it seems a sort of duty upon the race to remove the deteriorations of the Julian calendar. There are really no relevant objections to such a correction.

"Under our present calendar, lengths of months vary from 3 to 10 per cent; lengths of quarters vary by 2 to 3 per cent. In dealing with ordinary merchandise, we keep our measures of weights and quantities correct to a small fraction of one per cent; why then should we be content with time measures which wobble by as much as 10 per cent? Equalizing the lengths of quarters would be an enormous statistical advantage.

"As to the problems of transition from the old to the new systems, the Swedish Academy of Sciences has appointed a committee to discuss measures to insure that the inconveniences of the change shall be as slight as possible. It seems quite clear that a change which will not alter the incidence of any given day by more than two days can easily be met without serious legal difficulties. In fact, the new calendar will do much to clarify law and prevent the involved legal language which is now often necessary."

it from the ancient Egyptians), with slight modifications made by Pope Gregory XIII in 1582. The week did not exist among the Romans, but was superimposed on the calendar by Constantine at the time he made Christianity the official religion of the Roman Empire.

The most superficial examination of the subject will show that our Gregorian calendar is far from ideal. Its irregularities—particularly the wandering weekdays and the varying length of months, quarters and half-years — cause undeniable inconveniences. As a unit of measurement, the calendar is highly irregular.

All planning of activities in commerce, industry, transportation, education, law, etc., should be based on predictions of needs which ought to be made with a high degree of accuracy: but these needs are to a considerable extent dependent on the number of non-working days within the given period. A business man wants to estimate the probable consumption of a certain article of merchandise within an approaching period of time; a railroad wants to estimate the volume of traffic for the next month or quarter; a communal administration wants to chart the expected variations in the demand for electricity, gas or water. All endeavor to solve their problems by means of comparisons with corresponding periods in preceding years. But accurate conclusions cannot be reached unless the periods are precisely comparable. Under the present calendar this is well-nigh impossible without costly and time-consuming adjustments of the basic statistical data.

In my New York conversations with Miss Elisabeth Achelis, President of The World Calendar Association, I was intrigued by some of the examples she gave me of the statistical errors which have frequently resulted in the United States from calendar irregularities. The same sort of errors are no doubt equally prevalent in other countries.

For instance: the management of an American company, which provides electricity over a large industrial area, sent a letter to its stockholders informing them that the company had produced 258 million kilowatt hours during the previous January as against 220 million for the same month a year before. The management was rather proud of the result and pointed out that the increase in production was 17.3 per cent. But one of the shareholders promptly wrote a letter, pointing out that the previous January had one Saturday and one Sunday more than the same month of the previous year. In the United States, the week-end is characterized by a decrease in the consumption of electricity, which is 30 per cent lower on Saturdays and 75 per cent lower on Sundays. The real increase in production was therefore 21.5 per cent instead of 17.3, and the management had done even better than it thought. If the monthly pattern of weekdays had been reversed, the result would, of course, have been less favorable for the company.

In American insurance circles, there is considerable support for calendar reform owing to the fact that premiums which fall due on Fridays and Saturdays are paid with more regularity than those falling due in the middle of the week. The latter show a delinquency rate 25 per cent greater than the week-end collections. (The same figures obtain in relation to personal loans and installment purchases.) With a perpetual calendar

which would retain the same weekday arrangement from year to year, the insurance and finance companies could arrange matters so that no payments would fall due on "unfavorable" days.

The day after Christmas is not a holiday* in the United States, but in a recent year it fell on a Saturday, and consequently between two non-working days. No storekeeper knew whether his competitors would open their doors on the day following Christmas; there was general confusion in the shopping districts. Some stores were open, others were closed. A New York newspaper had to destroy 80,000 copies of its Saturday issue because the publisher had no basis for calculating in advance the correct number to print. In 1953 Christmas will again fall on a Friday, and the same sort of confusion will no doubt ensue.

* * *

History shows that the inconveniences of the present calendar have been observed and criticized for more than a century. Proposals for improvements were made as far back as 1800.

In 1834 an Italian priest, Abbé Marco Mastrofini, invented the plan which is the basis of The World Calendar. He proposed "a 12-month perpetual calendar in which the dates of the month would always fall on the same weekdays." To achieve this, he divided the year into 52 weeks, or 364 days. The 365th day (as well as the 366th day in leap years) was placed outside the week and not dated.

This plan attracted a lot of attention and was widely praised, but did not lead to any immediate practical results. The basic idea was revived in 1849 by the French philosopher Auguste Comte, who suggested a 13-month calendar divided into equal four-week months of 28 days each, using Mastrofini's year-end days to complete the solar year. Comte's ingenious 13 months were identical, but on the other hand his scheme practically abolished the useful quarters and half-years. For this reason, and because his calendar would have entailed too drastic changes, his plan was discarded and abandoned.

The standardized calendar which now has world-wide support, under the name The World Calendar, is also a derivative of the Mastrofini plan. It came to international attention for the first time in 1887, when the French Astronomical Society, under the leadership of Camille Flammarion, organized a competition for the best calendar-reform proposal. First prize went to a French astronomer, G. Armelin. His plan was almost identical with the present World Calendar, except that he began his years and quarters on Monday, thereby producing an undesirable effect in the varying number of work-days of successive months.

This carries our historical account of calendar reform up to The World Calendar, which differs from Armelin's plan by beginning the years and quarters on Sunday, instead of Monday. Thus all months invariably have 26 weekdays, and

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* Holidays have always been a difficult problem for students of calendar standardization. This subject has been exhaustively debated in England for 200 years. Down to the end of the 18th century no clear distinction was made in Great Britain between holy days and holidays, and thus it came about that in the early part of the 19th century the British banks were closed on about 33 weekdays yearly on account of saints' days and anniversaries. As this caused great inconvenience in a rapidly developing industrial civilization, Parliament dealt vigorously with the matter in 1834, restricting the number of authorized bank holidays to four per year.—Col. Clifford Gill, London.

the week—which begins on Sunday—is not split by the beginning of new quarters and new years.

Mastrofini's extra day is called "Worldsday," and comes at the end of the year. In business computations it would be tabulated either as W December or 31 December. The 366th day in leap years would be placed at the end of the second quarter, and tabulated as W June or 31 June.

The World Calendar is perpetual—each year is exactly alike. Each month-date falls on the same day of the week from year to year. Holidays, fixed as to their date, always fall on a determined day of the week. Christmas Eve will always be a Sunday and Christmas Day a Monday; New Year's Eve will always be a Saturday, followed by Worldsday. The following Sunday will be New Year's Day, and the working year will always begin on Monday, 2 January. The Swedish Midsummer festival will be Saturday, 23 June, and Sunday, 24 June.

All half-years and quarters are alike; the half-year has 182 days and the quarter 91 days.

As hitherto the months have either 31 or 30 days, but February* no longer is an exception. All months have 26 weekdays. The first month in each quarter is exactly like the first month in the other quarters, and the same relationship obtains in the instance of the second and the third month in each quarter respectively.

The relationship between dates and weekdays follows a regular pattern and is easy to remember: the first month in each quarter begins on Sunday, the second on Wednesday and the third on Friday.

As regards such religious holidays as Easter and Whitsunday, The World Calendar Association has deliberately refrained from touching them. The Association naturally considers it desirable that these holidays be fixed instead of movable—for you cannot derive full benefits from the regularity of the calendar until all holidays have been stabilized—but The World Calendar is civil and universal, whereas Easter and Whitsunday are religious and solely Christian. If they are to be fixed, this must be accomplished by action of the Christian Churches.

When a perpetual calendar has been adopted, it will be considerably easier than hitherto for each country to distribute its national holidays in a manner that best suits the desires of its population. We have an example in Sweden of the difficulties that this problem presents. It is important from the point of view of production and business in general to avoid splitting the working weeks. It costs, for example, a disproportionate amount of money to heat a factory for one single working day falling between a Sunday and another holiday. Therefore it is urged that holidays should not occur in the middle of the week, but rather on Saturdays or Mondays. This is also of considerable importance for educational institutions, courts and governments.

* That the shortness of February plays havoc with statistics has been demonstrated by Professor Schindler. We cannot make Nature simpler than it is, but we can undoubtedly improve our recording of its vagaries, as for instance by the correction of a single individual month with reference to the others. The proposal advanced by Schindler is the one advocated long ago by Arrhenius. It includes the adjustment of holidays, on which an international agreement was almost consummated 50 years ago, but was blocked by the Czar who allowed it to die by his quiet refusal to acquiesce.—Dr. J. Plassman, Munster, Germany.

On 13 February 1952, the Swedish Parliament decided to change the Annunciation and Midsummer holidays—to place them on certain weekdays and to add a new holiday, All Saints' Day, in the fall. The Annunciation Day will fall on a Sunday; Midsummer and All Saints' Day on Saturdays. This Swedish calendar reform may well bring some advantages, but it can be compared to putting a piece of new cloth on an old garment. We must henceforth as hitherto keep track not only of the changing dates of Easter and Whitsunday, but also of those of the Annunciation, Midsummer and All Saints' Day. Had we had a perpetual calendar, these feasts could have been completely stabilized, and would recur on the same day and date every year.

* * *

I have already traced the development of The World Calendar from earlier proposals. But it is also worth while following the steps taken towards the adoption, which is getting more and more timely.

The international congresses of Chambers of Commerce, as they were then called, declared themselves in favor of calendar reform in 1910, 1912 and 1914. The last mentioned congress, which was attended by 4,000 delegates from 41 countries, favored a perpetual 12-month calendar and proposed that the Swiss government make a thorough investigation of the matter and present its findings to the next international congress planned for 1916. A special international convention for calendar reform met in Liège, in 1914. The participants were representatives of religion, science, commerce and industry. The Congress declared itself in favor of a perpetual 12-month calendar with "extra" days, and against the 13-month calendar, which had no support.

Had the First World War not intervened, the reform efforts might have progressed according to plan, and the governments of the various countries might well have undertaken the legislation recommended by the International Chamber of Commerce. The issue was revived in 1921 by the same institution, which urged that a special conference be convened to deal with the matter. This recommendation was repeated in 1923, and then, for the first time, referred to the League of Nations. The latter took it up first through its Communications and Transit Organization.

This group was convinced that the irregularities of the Gregorian calendar caused serious difficulties to transportation and communications in particular. A Special Committee was set up, and undertook a fresh investigation of the entire problem. More than 500 reform plans poured in from all parts of the world. These proposals were classified and studied. Two main plans emerged, the 12-month calendar and the 13-month calendar. Their advantages and disadvantages were analyzed and Member governments were invited to establish national committees to study the documentation collected. In 1930 Miss Achelis founded The World Calendar Association for the promotion of the 12-month equal quarters plan known as The World Calendar.

In 1931 the studies of the national committees organized by the League of Nations had progressed far enough to make it possible to place calendar reform on the agenda of the Fourth General Conference for Communications and Transit, which was held in Geneva at the head-

quarters of the League of Nations. Some rather remarkable and important declarations were made, but no decision was reached.

The League Council also dealt with the matter. This occurred in 1937 following a proposal presented by the representative of Chile for the adoption of an international convention with a view to putting The World Calendar into operation. The League Council submitted this proposal to the governments of all countries, 45 of which replied. Of these 14 approved the proposal, 6 rejected it and the remainder did not express a definite opinion. The Council did not consider the majority substantial enough, and postponed the matter for two years. Before it came up again, the Second World War broke out.

The United Nations (which carries on the work of the League of Nations) has also dealt with the problem of calendar reform. Its Economic and Social Council (ECOSOC) included The World Calendar on its agenda in 1947. An important statement was made by Secretary-General Trygve Lie, who pointed out that of all proposals studied on the international plane, The World Calendar was the one which had received most favorable comments.

But ECOSOC had many other important problems to deal with, and calendar reform was again postponed. In 1949 the matter was included among the items on the provisional agenda of the General Assembly of UN, but again had to make room for more urgent problems. Such is the situation today.

The World Calendar Association headed by its energetic President, Miss Elisabeth Achelis, and supported by affiliates in 36 countries, carries on its work persistently and effectively. It hopes that the United Nations will act in the near future.

If The World Calendar, which has won such wide approval not only from astronomers and other scientists, but also from statesmen, industrialists and organizations of many kinds, obtains the support of a sufficient number of Member nations, the Economic and Social Council will present its findings to the next General Assembly, in 1953. In that case the international action will be completed in 1953, leaving two years for preparations by the national legislative assemblies. Miss Achelis hopes that The World Calendar will become operative on Sunday, 1 January 1956, since that date is the nearest occasion when both the Gregorian and The World Calendar begin the year with a Sunday, and the two calendars therefore coincide.

As Professor Arrhenius pointed out, there will always be objections to the change. Many of them are perhaps frivolous, like the woman who writes that "irregularities constitute agreeable variations in our pattern of living—why should my birthday always occur on the same weekday, when it's much nicer to have it fall differently every year?" It may be that some booksellers and calendar printers will fear lest the sale of annual calendars fall off disastrously.

A more serious objection is that even The World Calendar does not give us complete statistical comparability. Elements which are outside the scope of the calendar will always be present. But most statisticians are agreed that they will welcome and appreciate any improvement in the present system of time measurement.

NORWAY URGES ACTION

By Essy Key Rasmussen

Originally printed in the monthly publication of the Norwegian American Chamber of Commerce; reproduced here with revisions by the author.

WITH the old year drawing to its close, we shall soon discard our 1952 calendars. But those who are planning their individual activities and business schedules ahead, or practically all of us, have long ago checked holidays and other important dates for next year with the help of the new 1953 calendars.

We have discovered that most of our fixed holidays will occur on week-ends, which is good. But why should it happen so rarely? Why do we not always have concordance between dates and weekdays so as to save us many headaches?

The haphazard occurrence of most holidays is only part of the problem; the shifting pattern of month-dates and weekdays, the unequal lengths of the months, quarters and half-years are constant sources of confusion and complications, and, what is still more important, of considerable loss of money.

To be able to plan activities in trade, industry, transportation, education, *et al.*, with a fair degree of probability, it is necessary to know the number of working days and holidays within a given period. A businessman who wants to estimate the consumption of a certain merchandise within a certain time; a transport company wanting to foresee the volume of traffic to be carried over a certain sector of its system during a given week-end; or an electricity company endeavoring to estimate the variations in the consumption over a certain period, all base their estimates to a large extent on comparisons with the demand for the same period in preceding years. But accurate conclusions cannot be reached unless the periods are exactly comparable. As this is not the case at present, because of our changing calendar, it is necessary to make time-consuming and costly corrections of the statistical data, before they can be used.

At present we are witnessing an increase in international planning and coordination on the one hand, and of rationalization of production methods and refinement of tools and equipment on the other. But while the instruments for measuring the smaller time units—the hours, minutes and seconds—have kept up with the modern trend toward greater perfection, our yardstick for the larger time units, the calendar, is in dire need of streamlining.

This has been realized by numerous leaders for over a century. Norway is a pioneer in matters of calendar reform, as in so many other fields. The Norwegian government declared itself in favor of The World Calendar at the League of Nations in 1937, and seconded the proposal for its adoption introduced by Peru at the session of the United Nations' Economic and Social Council in 1947. Nor-

way's position remains the same today, according to a recent official statement.

The first perpetual calendar, with dates always falling on the same weekdays, was proposed in 1834. The World Calendar of today, with its 12 months and equal quarters, is based on the same principle; namely the division of the year into 52 weeks, 364 days. (Each quarter has months of 31, 30 and 30 days.) The 365th day, Worldsday, which will be a universal holiday, is inserted between Saturday, 30 December, and Sunday, 1 January. In leap years, the 366th day is intercalated between Saturday, 30 June, and Sunday, 1 July, and will likewise be a universal holiday. Worldsday will be tabulated as W December or 31 December; Leapyear Day will be W June or 31 June. Both days will be dedicated to goodwill, cooperation and peace.

Continuous efforts have been made by The World Calendar Association to promote the adoption of this simple and practical plan. Proposals for revising the calendar, long nourished by scientists as well as by businessmen, progressed in the 1920's when the League of Nations took up the study of this problem. After a thorough investigation by experts and various preparatory deliberations, the matter was finally placed before the League's Council in 1937. The representative of Chile proposed the adoption of an international Convention with a view to putting The World Calendar into operation. The proposal was submitted to the governments of all countries, 45 of which replied. Among the 14 countries approving the proposal was Norway. But the Council did not consider the majority substantial enough to justify its recommending the reform at that time.

The UN has also dealt with the problem, in 1947 and 1949. The Secretary-General pointed out in a report that of all proposals studied on the international plane, The World Calendar was the one which had received most favorable comments. But so many urgent problems crowded the agenda of the UN bodies, that the reform was again postponed. During the discussion in the Economic and Social Council, in 1947, the representative of Norway spoke in favor of maintaining the item on the agenda.

This was in keeping with the policy consistently followed by Norway since 1937. In 1948 the Norwegian affiliate of The World Calendar Association was founded under the energetic chairmanship of Major K. S. Klingenberg, noted topographer and director of the national Ordnance Survey for more than 20 years. Among the other distinguished members is Dr. H. Jelstrup, astronomer and editor of the official almanac of Norway. Major Klingenberg has created interest in The World Calendar both in Norway and elsewhere through newspaper articles and broadcasts. In an official letter, the permanent representative of Norway to the UN in July, 1952, reaffirmed the favorable attitude consistently adopted by his country.

The World Calendar Association and its affiliates in 36 countries, carry on the work. Wide support has been found among scientists, politicians, industrialists, educators and other leaders. It is hoped that the international action through UN can be completed in 1953, which will leave two years for preparation by the legislative assemblies of the

member nations. Then the new calendar can become operative in 1956, the nearest date when both the present and The World Calendar agree, since 1 January falls on a Sunday in 1956.

In a current magazine article, Major Klingenberg points out that many people shirk the mental effort needed to adopt new things. But he does not see any reason for postponing this inevitable change. "Coming generations should not be inconvenienced with the burden of an inefficient calendar," is his conclusion.

I have recently come across some interesting examples of confusion and loss due to our antiquated and disorderly calendar. These occurred in the United States, but they could easily be duplicated in Norway or any other country.*

Perhaps the most striking of these examples was in connection with the important monthly statistics of retail sales in November 1952. The period included the American holiday of Thanksgiving, which occurs on the fourth Thursday of the month.

A statement in the newspapers at the end of the month told the financial community: "November was a disappointing month for the city's big department stores, with dollar volume off 9 per cent from the like 1951 period."

But a careful examination of the figures showed that the 9 per cent decline was almost entirely a matter of calendar conditions. The month of November 1952 had a distinct calendar disadvantage as compared with its predecessor. To start with, the month had one less selling day than it did in 1951. This day was worth 4 to 4½ per cent to the merchants.

November also had one less Thursday than in 1951, and as a result, there were only two selling days after the Thanksgiving holiday, contrasted with seven days a year ago.

Selling days after the Thanksgiving holiday are far more important than those before the holiday. Christmas buying traditionally starts with the Thanksgiving holiday. Store executives figure that they normally do at least 20 per cent more business in any November day after Thanksgiving than they can do in a day before that date. Therefore the loss of five selling days after the holiday this year was a serious factor, amounting to about 4½ per cent of the month's business.

These two calendar changes—one fewer selling day in the month and five fewer selling days after the Thanksgiving holiday—represented practically 9 per cent in loss volume. In other words, the entire November deficit of 1952 was due to calendar irregularities, which would not occur under The World Calendar.

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*In England, for example, a business publication makes this comment: "Commonsense consideration of the matter leads to the conclusion that, in a world which is inevitably becoming more and more systematized, it is impossible to dispense with accurate standards of measurement, whether they be standards of time or weight or value. Many of the world's troubles today are due to the failure of our standards of value, and we do not hesitate to say that an increasing amount of time and money is wasted every year by reason of the inconveniences and irregularities of the calendar . . . Calendar reform is a live question. Our private lives and our business arrangements alike are complicated and disorganized by the inefficiency of our existing time system. The international machinery for reform is ready, and the beneficial work should not be impeded by the apathy of unprogressive opinion. There is little doubt that sooner or later England will accept the new system, and when a rational calendar has been in operation for a few months we shall wonder why we were so long in adopting so simple a method of escape from an obsolete and awkward pattern."

JAPANESE BUSINESS APPROVES

By Sadanobu Inoue
An Address at Duke University, Durham, N. C., 26 August 1952

AS a Japanese business man, I find myself very happy to appear on this platform, for the purpose of discussing with you an international idea which seems to have great merit from the viewpoint of efficiency, economy and better world relationships. I refer to the proposed revision of the calendar, which would correct the burdensome irregularities of the antiquated Gregorian system.

As you know, I am spending a year in the United States, studying modern business methods with a view to applying some of them in my own country, and teaching them to my colleagues and fellow-countrymen. My particular interest is the field of foreign trade, where there is urgent need to eliminate waste, overlapping and duplication. One of the handicaps in this field is manifold documentation and unnecessary paper work. The punch card system and similar devices have been widely adopted in America to remedy this situation. They are part of the rapid development of improved accounting and statistical methods.

Here then is a field where calendar irregularities exact a frequent penalty in time, effort and expense. Thus the problem of calendar reform becomes a vital matter not only for my business, but in the daily life of every one of us. I have been interested in it for several years, and have served as a member of The Calendar Association of Japan since it was founded.

It was more than a century ago, in 1834, that the improvement of the Grego-



Executive Committee of Japanese Calendar Association. Left to right: Messrs. Inoue, Hasegawa, Imoto, Tanaka, Nakamura, Kanda, Noda, Kotani, Takagi and Saeki. Dr. Noda is vice-president of the Association, Mr. Imoto is secretary and Mr. Takagi is managing director. Headquarters are at the Osaka Planetarium. Four of the men shown are astronomers.

rian calendar was first suggested by a Roman Catholic priest, Abbé Marco Mastrofini. He advanced a plan for a 364-day year, with the 365th day added as an extra day outside the week. By this simple formula, he showed how the calendar could be made "perpetual"—identical for every year, with each New Year unfailingly beginning with Sunday, 1 January. The inspired Mastrofini is the father of modern calendar reform, and the world owes him a great debt for generating this powerful idea.

His proposition was slow in taking hold, but in the past half-century it has advanced a long ways toward achievement. The World Calendar, as it is known today, has developed as a composite of many minds and many years of patient study and research. My own interest in it stems from a contact with Miss Elisabeth Achelis of New York City, who is president of the international movement for its adoption. She gave me the opportunity to learn all the facts about it, and when I was struck with the scientific character of the plan and its advantages to business and social life, I determined to advocate it in Japan.

Already the movement was international in scope, and supporting committees had been organized in 36 countries. It had been one of the most active projects in the League of Nations for a decade, and it had now moved into the permanent agenda of the United Nations, where Secretary General Trygve Lie had prepared a comprehensive report on its current status. In 1949 the General Committee of the General Assembly of the UN had recognized its importance, but postponed definitive action by a tie vote of four to four, with four abstentions and two absentees. At that time it was shown that 17 governments had taken approving action, inviting world adoption.*

So much for the current international situation. Now let's get back to fundamentals. Exactly what is wrong with the present calendar, which has been in use about 2,000 years with only the slight astronomical corrections made by Pope Gregory XIII shortly after Christopher Columbus? Why is the Gregorian system called "a slipshod formula that robs us of our time, energy, labor and money"?

The basic difficulty is that every year has 52 weeks of seven days plus an odd day with a fraction over. As the calendar must borrow this odd day (or two days in leap years) from another week to complete the solar year, every year shifts its weekday arrangement, and is different in composition from the preceding and following years. Thus comparability is difficult and inaccurate.

Let me explain it in another way. As you know, the first day of January may fall on any of the seven weekdays. So, considering the leap years, we use 14 different types of years. By a similar analysis, we find that our calendar contains 28 different kinds of months, with 28, 29, 30 and 31 days, starting on any one of the seven weekdays. These two defects are responsible for the hodge-podge character of the calendar and for its meandering holidays. The whole sys-

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* It is our opinion that today's pressure for calendar reform is a powerful influence for international peace. In seeking to make the calendar universal and perpetual we are reconciling and bringing together age-old differences of reckoning, thought and nomenclature. It is a tendency which has already gone far on the path toward realization, and a standardized calendar is another step, and an important one, in this program on behalf of world unity.

tem is planless, replete with caprice and quirks, lacking order or dependability.

It is rather ridiculous to find monthly payments and salaries completely unequal, merely because seven months have 31 days, four have 30 days and one has 28 or 29 days. Meanwhile, owing to the wandering nature of the weekdays, months vary even more widely in their number of business days or working days. Such unnecessary irregularities are costly. Millions of dollars' worth of precious time and honest effort are devoted each year to compiling new schedules for schools and colleges, or for transportation systems, or for industrial labor and delivery programs—schedules which must be discarded at the end of the year, never to be used again. This tiresome and thankless task extends more or less into all avenues of life.

Now let us look at The World Calendar, which is the proposed improved system.

As the League of Nations pointed out, The World Calendar of equal quarters is a well-coordinated time-plan. In it, every time unit is of equal value and importance. The former confusions and conflicts change to order and concord. Every quarter-year has its full quota of days, weeks and months. Birthdays, anniversaries and commemorations will always be recorded on the weekday of occurrence as well as on the month-date. A Sunday child will continue to be a Sunday child, and a Monday child will celebrate his birthday on Monday, and so forth. For the first time the calendar will record the day with the date, month and year.

From the viewpoints of transportation, education, religion, home, government, law, labor, finance, science, agriculture, and business, The World Calendar is undoubtedly ideal. I think all of us would like to see a calendar which would render the making of comparisons simple and stable from month to month and year to year, and would balance the year so that the quarters were at least identical, beginning and ending on the same day.

The United States, England, France, Italy and Japan have hitherto lacked the authorization of their governments to do more than express their general agreement that the subject is one of significance and importance. As one of the American commentators explained at Lake Success: "Our delegation needs a mandate from Congress, or from the State Department—and this will presumably come only in response to a more general public demand for the proposed new calendar." The public demand, then, is a goal to be sought. The proposed adoption date for the new calendar is Sunday, 1 January 1956, when the transition can be effected most easily, because on that day and date both the old and new calendars coincide.

So far, our Japanese Association has obtained endorsements from the powerful Chambers of Commerce at Tokyo and Osaka, and has the personal support of many influential individuals in business and government. We are constantly adding to this growing circle of influence.

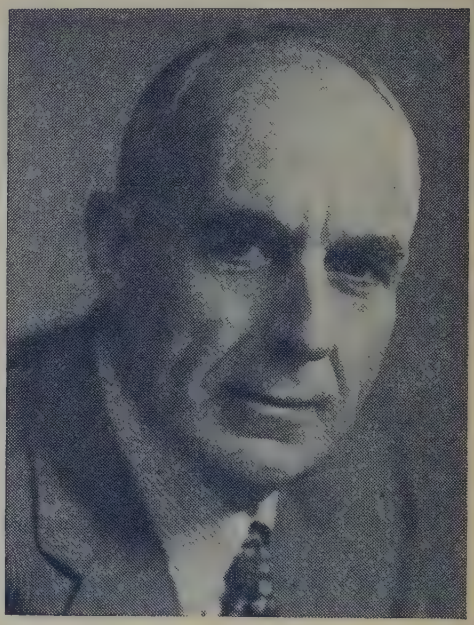
Just as a test of the validity of my appeal, I would like to get the personal endorsements of my audience today, and I am therefore asking you to sign a statement which I have prepared and which I wish to present in due course to the international headquarters of the movement, and to my associates in Japan, as a stimulus and encouragement of their activities.

URGENT INTERNATIONAL BUSINESS

By Sir Harold Spencer Jones, F.R.S.
Astronomer Royal of Great Britain
(Abstracted from an Address at the Royal Society of Arts, London, 17 October 1952)

PROPOSALS for calendar revision are now before the United Nations, and it is to be hoped they will be seriously considered on their merits. Governments are inclined, in subjects of this kind, to take a *laissez faire* attitude and to argue that "there is no general demand" for such a reform. But surely it is the duty of governments to lead their people in matters of general betterment—and this reform is urgent international business. The best counter-measure to the delays and postponements of the politicians and diplomats is to obtain the widest measure of support for our cause, by means of a vigorous campaign to expound its advantages to the ordinary man.

The chief defect of the Gregorian calendar is in the anomalous arrangement of the lengths of the months, which was carried over from the Julian calendar. Few people can remember off-hand how many days any particular month contains without repeating the familiar mnemonic, "Thirty days hath September, etc." The four quarters of the normal year contain 90, 91, 92, 92 days respectively, and the two half-years 181, 184 days. Counting Sunday as a non-working day, the number of working days in a month can be 24, 25, 26, or 27. If we count Saturdays also as non-working days, under the five-day working system, the number of working days in a month can be 20, 21, 22 or 23. Years, months and quarters may begin on any day of



Sir Harold Spencer Jones

Introducton of the speaker by Chairman Dr. L. E. C. Hughes: "The Astronomer Royal is well known to us, both in his official capacity and in his writings and broadcasts. His clarity of expression is always of great assistance to lay persons in studying the subject of astronomy. We have discovered that he has considered the calendar in great detail, both historically and as a practical matter for the future. He has deduced proposals which are substantially identical with those put forward by our Association. We have accordingly invited him to tell us about the fundamental facts which determine any calendar, to show how calendars of the past have tried to approximate these requirements, and to suggest how the defects of our present calendar can be removed."

the week, and the calendar changes from year to year. These defects are the cause of much inconvenience, both to the business community and in normal civil life.

Different plans for revision have been proposed. To my mind there is only one that is deserving of serious consideration and that is the calendar advocated by The World Calendar Association.* In this proposal the year is divided into four equal quarters of 91 days, leaving one day over in normal years and two days in leap years. Each quarter is divided into three months of 31, 30, 30 days respectively, and therefore contains exactly 13 weeks, commencing with a Sunday and ending with a Saturday. The second and third months always begin on Wednesday and Friday respectively.

But what about the days left over? The proposal is that they should be, as it were, extra-calendar days and that they should not count as days of the week. At the end of each year an extra day would follow 30 December; it would be a world holiday and would be known as Worldsday. It would be neither Sunday, nor Monday, nor any other weekday. In leap years there would be an extra day between the first and second halves of the year, known as Leapyear Day, which would also be a world holiday.

This scheme of extra-calendar days is novel and ingenious. Some people might even call it revolutionary, in the sense that it has not entered into any previous calendar revisions (although precedents are plentiful in the Egyptian intercalary days and in the ancient Hebrew pentecontad calendar). But it should not be opposed on that ground, because it provides a calendar of great simplicity, in which the day of the week of any date of the year can be found mentally in a few seconds. This calendar is perpetual, and it becomes unnecessary to print a new calendar each year.

Some people have objected that The World Calendar breaks the continuity of the week, and that this is against divine ordinances, so that the calendar is therefore unacceptable. This objection does not seem to me to carry much weight in these days of rapid travel. A traveller crossing the date-line, in 180° longitude, whether by sea or by air, may miss out Sunday, so that Saturday is followed by Monday, or may have two Saturdays or two Sundays in succession. It is thus quite impossible for everybody at all times to maintain the continuity of the week. We might recall, moreover, the words of Christ: "The Sabbath was made for man and not man for the Sabbath." To have an extra non-working day in one or two weeks of the year certainly does not seem to me to conflict with the spirit of any divine ordinance.

A calendar is a method of fixing the

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* Several years ago the author wrote: "It is as a citizen and not as an astronomer that I am interested in this reform. The astronomer can work independently of any calendar, and makes much use of a system called the Julian Day reckoning, that is never employed for ordinary everyday purposes. He numbers days consecutively from January 1, 4713 B. C. . . . However, I welcome this opportunity of making it clear that astronomers, so far as their scientific work is concerned, can have no objection to calendar reform. But as citizens, with many interests in common with other members of the community, they are not indifferent to schemes of calendar revision. They may take, perhaps, even more interest in such proposals than the average member of the community because many astronomers feel that they have, historically, a vested interest in all that pertains to the calendar. Many of the foremost astronomers in all countries have expressed themselves in favor of The World Calendar."

order, lengths, and subdivision of years and months for the convenience of civil life, the guidance of day-by-day activities, and the fixing of religious feasts and observances.

The three astronomical periods which are most important in everyday life are the day, the month, and the year. But it is important to be clear about the sense in which these terms are used.

The day is determined by the rotation of the Earth on its axis. The period in which the Earth makes a complete rotation through 360° is called a sidereal day; it is the interval between two consecutive transits of any given star across any given meridian. But in everyday life it is the alternation of daylight and nighttime, associated with the rising and setting of the Sun, with which we are concerned. Because the Sun, as viewed from the Earth, has an eastward motion relative to the stars at a rate of about 1° per day, the Earth has to turn through approximately 361° to complete one rotation relative to the Sun. Thus the true solar day is about four minutes longer than the sidereal day; it is moreover not uniform in length, so that we use for convenience a mean solar day, of constant length, this length being the average of the lengths of the true solar days throughout the year.

The month can be defined in various ways. For calendar purposes it is the lunation or lunar month, the period from new Moon to new Moon or full Moon to full Moon, that is important. Because the orbits of the Moon round the Earth and of the Earth round the Sun are slightly elliptical and because of the perturbations of these orbits, the length of the lunation is not constant; its extreme range is about 13 hours. The average length of the lunation is 29.530598 days.

The year can be defined in several ways. The period of revolution of the Earth round the Sun, relative to the fixed stars, is called the sidereal year. In early times its length was derived from observations of the heliacal risings of stars, i.e., by the first appearance of conspicuous bright stars, such as Sirius, in the morning twilight near the eastern horizon. Its length is 365.256360 days. More important for the use of man, however, is the year defined by the recurrence of the seasons. The commencement of the seasonal year is taken as the moment when the Sun passes through the point in the heavens known as the First Point of Aries; it is the point where the ecliptic crosses the equator from south to north. This year is known as the tropical year and its length is 365.242199 days. Because of the retrograde motion of the First Point of Aries resulting from the precession of the Earth's axis, the sidereal year is about 20 minutes longer than the tropical year. The difference between the lengths of the two years was found with fair accuracy by the Greek astronomer Hipparchus about 130 B.C.

The tropical year contains 12.368267 lunations. It is to the incommensurability of the three natural periods of time, the day, the month, and the year, that the difficulties in devising a satisfactory calendar have been due. Moreover, long before the lengths either of the lunation or of the tropical year were known with any accuracy, the need was felt of a calendar for regulating the preparation of the ground, the sowing and harvesting, and for determining the proper times for the observances of religious festivals, which

were usually related to the phases of the Moon.

The beginning of the lunar month was customarily fixed either by the first appearance of the crescent of the new Moon in the evening sky after sunset, or by the first invisibility of the crescent of the old Moon in the morning before sunrise; which method was used depended on whether the beginning of the day was taken as the time of sunset or of sunrise. Instead of dividing the day into 24 equal hours, it was usual to divide the intervals from sunset to sunrise and from sunrise to sunset each into 12 hours; our present system of counting hours from 1 to 12 twice over, instead of from 1 to 24 is due to this ancient division of the day into two parts. The daytime and night-time hours were, of course, different in length except at the equinoxes, and the lengths of each varied through the year; the hours defined in this way were known as "temporal" hours.

The first or last visibility of the lunar crescent depends, under clear conditions, on several variable factors—the angles which the ecliptic and the plane of the Moon's orbit make with the horizon; the angular distance of the Moon north or south of the ecliptic; and the distance of the Moon from the Earth. According to the circumstances, the crescent Moon might first be seen, in the latitude of Babylon, as early as 16 hours after new Moon, or as late as 42 hours after. Bearing in mind the variable length of the lunation itself, there could be considerable uncertainty in a prediction of the time of the next new Moon.

Various meteorological phenomena can be used to provide a rough guide to the passages of the seasons; for instance, the alternation of a warm summer and a cold winter in northern latitudes, or of a wet season and a dry season in lower latitudes, or, as in Egypt, the annual flooding of the cultivable land by the rising of the river. But meteorological phenomena are too irregular in their occurrence to serve as a reliable guide; an abnormal spell of weather might result in sowing being unduly delayed, with the risk of crops not ripening in due season. Something more definite was needed. So astronomical observations of one sort or another had to be employed as a safer guide.

From very early times it was known that different constellations were visible at different seasons of the year. The background of the stars cannot be seen when the Sun is above the horizon, so that the position of the Sun amongst the stars is not directly observable. Amongst the Babylonians and Egyptians it was customary to observe which bright stars were visible in the morning twilight near the eastern horizon; as any given star crosses the meridian and is due south about four minutes earlier each day, there will come a day when a bright star, such as Sirius, is first seen in the morning twilight; this is called its heliacal rising. The observation of the heliacal risings of bright stars indicated the passage of the Sun amongst the stars.

The succession of the seasons could also be marked out by the use of the gnomon—a stick stuck vertically into the ground. The Sun in the course of the year has a northward and southward motion amongst the stars; it attains its most northerly point at northern midsummer, and its most southerly point at northern midwinter. At the summer solstice it

therefore rises at its farthest north of east and sets at its farthest north of west; at the winter solstice, it rises at its farthest south of east and sets at its farthest south of west. By observation, the extreme positions of the shadow of the gnomon could be determined and marked out by stones, and when so marked they served as a guide for later years.

But the great problem was how to combine the lunar months into years. The length of the tropical year exceeds 12 lunations by about 11 days. If the year were taken as 12 lunar months, this difference rapidly accumulated and it became necessary after two or three years to add a thirteenth month to keep the seasons in approximately their correct position in the year. Such intercalations originally took place rather arbitrarily, at irregular intervals and according to local whims. There was no general consensus of opinion about how and when a thirteenth month was to be added. Gradually, with the emergence of a priestly caste, the regulation of the calendar became one of their functions, primarily because they were responsible for fixing the days for the observation of the religious festivals. Records of the occurrence of eclipses of the Sun and Moon and other phenomena were kept by them; regularities were noted and various cycles were derived, which have played an important part in some calendar schemes.

The seven-day week is an artificial interval of time, not marked out by any celestial motions. It was introduced into Europe from the Assyrians and then from the Jews it was taken over by the Christians. Though the Egyptians must have been familiar from early times with the seven-day week, there is no reference to its use before the third century A.D. The Egyptians divided their 30-day month into three 10-day periods or decans.

The calendars of ancient Greece are an excellent example of the difficulties which arise from irregularities in any system of time measurement. The beginning of each month was determined by the first appearance of the crescent moon in the sky, so there were normally 29 or 30 days in a month. Adjustment of the calendar to the seasons was made by observing the risings of bright stars. An extra month was added from time to time to keep the year in approximate step with the seasons.

As there was no common agreement between communities about these adjustments, and even a frequent neglect to keep the months correctly by the moon, confusion was a normal state of affairs. Manipulation of the calendar became such a public scandal that it was held up to ridicule by Aristophanes in *The Clouds*, a drama produced in 432 B.C.

Gradually, with the development of a more centralized civic life, the need was increasingly felt for a calendar arranged according to definite and inflexible rules. The first crude attempt in this direction had been made by Solon about the beginning of the Sixth Century B.C. From this came the "cycle of Meton," introduced at the time of the Aristophanes drama in 432.

The Greeks numbered their years according to the reign of kings or magistrates. But for the purpose of dating events in Greek history, the era of the Olympic games is most useful, because from the year 776 B.C. onwards, the games were held regularly every four years at about the time of the summer solstice.

TOWARD A HAPPIER, HEALTHIER WORLD

By Col. Dr. Clifford A. Gill
Abstracted from a Monograph published in London

MOST obvious requirement of a calendar is that it should be simple and convenient for everyday use. That the existing calendar exhibits many defects from this point of view is well known.

But simplicity and convenience, although of great importance, are not the sole functions of the modern calendar. It can be shown that the calendar also is capable of playing an important part in promoting the health and well-being of the community. That this is one of the functions of the calendar is perhaps not quite self-evident, or at any rate so well recognized.

The amount of time at man's disposal for work and for play is strictly limited. Hence it is necessary that the distribution of time by the calendar should be so arranged that he can make the best use of the time available. Furthermore, the more arduous the labor and the more monotonous the work, the more necessary it is that his life should be so ordered that, with the least possible reduction in the number of his working hours, or in other words of his earning capacity, he should have at his disposal the maximum possible amount of time for the enjoyment of the amenities of life.

This proposition perhaps smacks of the commonplace, but to appreciate its relevancy in the present context it is necessary to refer to the conditions prevailing in modern workaday England.

One of the outstanding social problems in Great Britain at the present time is that occasioned by the mass migration of the population to the towns, which commenced at the time of the industrial revolution about a century ago and has continued more or less ever since, with the result that currently about 80 per cent of the population is concentrated in our large towns and cities.

It is generally recognized that this change in the environment of a large proportion of the population has exercised a profound effect upon both the physique and mentality of the inhabitants of our congested areas, and it is indeed largely with the object of remedying the ill effects associated with urbanization that many of the schemes for post-war reconstruction have been devised.

From the physical point of view these ill-effects may roughly be divided into those associated with the arrested growth and defective physical development of otherwise healthy individuals, and those directly and indirectly concerned in the production of demonstrable disease. In regard to the former no precise statistical evidence can be quoted, but when one compares the relatively stunted growth and poor physique of the average inhabitant of slum areas with that of his op-

posite number in rural England and his cousin from overseas, it is difficult to avoid the conclusion that the generally held view in regard to the inimical effects of urbanization is well founded.

Much has no doubt already been done, by the clearance of slums, by the provision of parks and gardens, and by many other measures, to ameliorate the conditions prevailing in urban areas, but if it is possible, by making a few small changes in the calendar, to add to the efficacy of these measures, in however small a degree, it is surely necessary that these changes should be made.

Although the science of medical climatology is still in its infancy, and although existing knowledge of the biological effects of solar radiation is fragmentary and incomplete, it is known that the elaboration of Vitamin D, which is essential to growth and physical development, is dependent upon the action on living tissue of ultra-violet rays from the sun. It is also known that these rays are unable to penetrate an atmosphere laden with smoke, dust and other impurities, and that on this account, in Great Britain about three times as much ultra-violet radiation reaches the surface of the earth in open country as in smoky cities, and that even more is received at the seaside than in the open country.

It is reasonable to suppose therefore that prolonged residence, more especially during childhood and adolescence, in an environment where the atmosphere is always more or less polluted, where sunshine (largely deprived of ultra-violet light) and fresh air penetrate with difficulty, where artificial light throughout the day is often necessary, and where adequate facilities for physical exercise in the open air are rarely available, is not compatible with optimum vigor of mind and body, and may even be responsible for arrested growth and development.

Nor can it be doubted that sunshine, fresh air and physical exercise have an appreciable effect in raising the powers of resistance to certain diseases, such as tuberculosis and rheumatism. In the case of tuberculosis—a predominantly urban disease—it is largely upon raising the victim's powers of resistance, by means of fresh air, sunshine and graduated exercises, that we rely to arrest the progress of the disease and pave the way to its cure.

The dysgenic conditions associated with an urban environment are no doubt in some measure irremediable, and it would therefore seem, since a back-to-the-land policy is impracticable, that the only feasible method of mitigating the harmful effects of urbanization is to reproduce so far as may be in the towns and cities the environmental conditions prevailing in rural areas. We shall not enumerate the various measures that might be taken in pursuance of this back-to-Nature policy, as they lie outside the scope of this article, but it is clear that a calendar in which full use is made of the device of "summer time" (combined with the provision of accessible open spaces) is capable of bringing more sunshine and fresh air within the reach of the urban population.

Some parks and public gardens have been provided in and around our cities and large towns. We have, or hope to have in the near future, "green belts" around our large cities. And beyond them lies the green and pleasant land that is

England—the real England. Still further afield, but not too far, lies the silver sea that serves our island in the office of a wall, and here again by the judicious planning of public holidays, the calendar can do much to promote the health, well-being and happiness of the population.

We are concerned with the various ways in which the calendar can be made to serve these ends, having outlined in general terms the reasons for regarding the promotion of the health and well-being of the community as one, and not the least important, of the uses of the modern calendar.

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Everyone is more or less aware that our present calendar suffers from many inconveniences.* But from long familiarity many have come to regard them as necessary evils, or as part of the ordained scheme of things which should be borne, like the weather, with becoming fortitude.

Although most people could name, out of their own experience, some of the more glaring defects of the calendar, probably not many would be prepared offhand to give a full tally of its deficiencies.

We propose therefore to enumerate the various respects in which the existing calendar fails to meet the needs of the modern workaday world, more especially as by doing so, not only will the indictment enable anyone to form his or her own opinion of the need of reforming the calendar, but it will also serve to indicate the points to be taken into account in any scheme for its revision.

Many of the inconveniences of the calendar are due to the fact that there are 52 weeks *and one day* in the year. On account of the odd day, the first of January—or any other date—comes one day later in each succeeding year (except in the case of leap years, when the dates after 29 February leap forward, so to speak, two days in the week).

It is therefore not easy to memorize the calendar, and it becomes a troublesome business to ascertain the day of the week of dates a long time past or ahead. It is inconvenient that anniversaries should fall on a different weekday in each succeeding year, and that the last day of a quarter should only rarely coincide with the last day in the week and never with the last day in the month. It is disadvantageous that the length of the Christmas holidays should vary from year to year (thus when Christmas Day falls on a Monday the Christmas holidays last 3½ days, but when Christmas Day falls on a Tuesday, Wednesday or Thursday, the holidays only last two days; on a Friday and Saturday three days; on a Sunday 2½ days).

It is inconvenient that dated events which recur annually should sometimes fall on an unsuitable weekday (thus in

*From a report to the Office Management Association: "The greatest boon which calendar revision could bring would be stability. The most annoying defect of the present calendar is its instability, caused by the shifting each year of the relationship of month-dates to weekdays. It is felt that business conditions of all kinds will be improved by the fixity and balance which The World Calendar would install." From a report to the Statistical Association: "Considered in relation to statistical methods, the principal object of standardizing the calendar is to make time intervals more uniform and comparable. Since statistics are important to all scientific and economic advancement the result will be worth while in greater accuracy and simplicity. In fact, all the efforts now made by statisticians to adjust their weekly and monthly data really constitute calendar revision, although the method used is temporary and confusing. It will be wiser to correct the calendar itself."

1943 Good Friday was also St George's Day). It is even more inconvenient when annual events that have to be related to a given weekday have to be assigned fresh dates every year. On this account the day appointed for the commencement of "summer time" in the Summertime Act of 1925, has to be defined in terms that permit of a variation of 13 days in the date of its commencement in different years.

Inconveniences are also occasioned by the inequalities in the lengths of the months. As 365 is not exactly divisible by 12, the months cannot all be precisely equal, but they might approach such equality more nearly than they do. Their unevenness, and particularly the reduced number of days in February, introduce an unnecessary complication into many calculations, since monthly rates require "correction" for the varying number of days in the months.

The division of our British year into quarters on the basis of the four quarter days* does not provide suitable units of time for any modern statistical or other purpose. There is not only a difference of ten days between the length of the third and fourth quarters, but the first quarter contains a week belonging to the last month of the previous year. In Scotland, the quarters vary even more in length, for while there are 102 days in the first and third quarters, there are only 78 days in the second quarter and 83 days in the fourth quarter,—an almost intolerable statistical situation.

These inequalities may not be a matter of much consequence from the viewpoint of tenure of land and property, but they render these units of time so unsuitable for most other purposes that by common consent they have been discarded in favor of the calendar's simpler three-month quarters, which strange as it may seem are not recognized by the British law as a unit of time.

The most keenly felt and widely recognized inconvenience of the present calendar is without doubt (as far as Great Britain is concerned) that occasioned by the great oscillation in the date of Easter, which may fall on any date between 22 March and 25 April, a period of five weeks or 35 days. In England it has been said: "If there were no other reason for revising the calendar, the removal of this handicap to efficiency would provide sufficient justification for doing so. On the other hand, any scheme for revising the calendar that fails to remove this defect is scarcely worthy of serious consideration." However, that is a matter for the ecclesiastical authorities, who will no doubt take it up promptly once the governments have done their part on the civil side.

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We have hitherto confined attention to the defects of the calendar from the viewpoints of simplicity and convenience, and it now remains to examine its defects as an instrument for ministering to the social needs of the community. A calendar devised by Julius Caesar can hardly be expected to provide fully for the social needs of modern England. Nevertheless,

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* In England and Wales the four quarter days are 25 March, Lady Day (Feast of Annunciation); 24 June, Midsummer Day (Feast of St. John Baptist); 29 September, Michaelmas Day (Feast of St. Michael and All Angels); and 25 December, Christmas Day. In Scotland, the following days are observed as quarter days: 2 February (Candlemas); 15 May; 1 August (Lammas); and 11 November (Martinmas).

as we have seen, something has been done by various Acts of Parliament to adapt the distribution of time to modern needs.

At present there are four occasions during the British year—at Easter, Whitsuntide, the first week in August and Christmas—when bank holidays provide opportunity for week-ends in the country. But much water has flowed under Westminster Bridge since the Bank Holidays Act was passed in 1871, and it is obvious that the time has come when the number of bank holidays should be augmented and their timing and spacing reviewed.

For climatic reasons, week-ends in the British countryside are most appreciated and most beneficial during the summer. But there are only three bank holidays during the summer half of the year, April to September inclusive. Consequently there are no week-ends in the country to be taken in June, July or September—which from the viewpoint of the holiday-maker, are some of the best months of the year.

For reasons already set forth, we regard it as a matter of considerable importance that the British calendar should provide the maximum possible amount of time for physical exercise in the open air during the long days of summer—on the part, more particularly, of the adolescent section of the urban population.

The Summertime Act goes some way to meet this requirement, but it must be remembered that when William Willett originally put forward his proposal for daylight-saving in 1908, it was received with ridicule, and it is improbable that the Summertime Act would now be in operation if the urgent need of reducing the consumption of fuel during the first World War had not led to the passing of the 1916 Daylight-saving Act, as a temporary war measure. During World War II "double summer time" was introduced as a temporary wartime measure, solely with the object of saving fuel.

It would seem therefore that the view has yet to be established that the primary purpose of summer-time legislation is not the saving of fuel but the conservation of health, and on this account it is held that more might be done to increase the number of hours available for exercise in the open air during the summer months.

Revision of the calendar is bound to cause a certain amount of public inconvenience, and it is therefore necessary that ample warning be given of any impending change. The existing (Gregorian) calendar did not come into force until two years after the passing of the Calendar (New Style) Act of 1750, but perhaps under modern conditions this period could be somewhat reduced.

We have not, however, a free hand in fixing the date of introduction of the new calendar, since it can only be introduced, without disturbing the existing calendar, in a year when 1 January falls on a Sunday. This will not happen until the year 1956.

This circumstance imports always an element of urgency into the reform proposals. At the present writing, provided the question is taken up without undue delay, there would appear to be sufficient time for the due consideration of the measure and the enactment of the necessary legislation.

Certain minor difficulties and inconveniences, for the most part of a temporary nature, remain to be mentioned. The disappearance of certain dates from the calendar—such as 31 March, 31 May and 31 August—may be disconcerting, more especially to those born on these dates, but birthdays can be legally celebrated on the previous day, as is now done with those born on 29 February, and other events can be treated similarly.

The change in the number of days in certain months is perhaps not in need of justification, in view of the fortuitous manner in which many of the months came by their present number of days. That one week in

the year (two in leap years) should have eight days is no doubt a novelty, but as can be clearly seen, it cannot be avoided, and it is not more tiresome than the addition of one day to the year every four years—a routine to which we are already accustomed.

It is obviously desirable that nations nearly related geographically, or closely connected by racial, cultural or economic ties, should employ a similar method of measuring time. The existing calendar is in large measure a universal one, and it is clearly advisable that any change made in it should be universally adopted. Indeed, to facilitate intercommunication and intercourse between nations in the new post-war world, something in the nature of a "world calendar" is much to be desired. On this account the revision proposed by The World Calendar Association is intended to serve as a universal system—"a new calendar for a new world"—and the hope is expressed that it will be adopted as such by international agreement.

In view however of the varied nature of the functions of the calendar, the ideal of a universal pattern is not easily realized. There is no difficulty in devising a world calendar to meet the requirements of simplicity and convenience, since in these respects the needs of most nations are similar, but owing to climatic variations and other internal considerations, the new calendar needs to be reasonably adaptable, so that it can make adequate provision for the distinctive social and health needs of individual nations.

The ideal arrangement then is a calendar which provides uniformity in respect to the attributes of simplicity and convenience, and at the same time permits of a certain diversity of application in other respects.

All that is required of the calendar from the international viewpoint is that any given date shall fall on the same weekday in all countries, and this requirement will be met if every nation agrees to adopt the same type of perpetual calendar as the foundation for its national system. Utilizing this as the basic plan, each nation would then be in a position to frame its holidays and subdivisions to suit its distinctive needs, subject only to the proviso that in doing so the perpetual character of the calendar remains unchanged.

A calendar framed on these principles would thus be a world calendar from the viewpoint of the synchronization of dates and days, and at the same time a national calendar from every other viewpoint. A world calendar in this limited sense not only meets national and international needs, but as a practical proposition, it possesses many advantages. It leaves each sovereign state a free hand in the preparation of its national program of dates and observances, and makes the transition easier.

Along these lines I have formulated a British calendar, in which I have suggested the most agreeable bank holidays, quarter days and legal procedures. This provides a practicable means of removing the inconveniences and disabilities attaching to the use of the existing calendar and adjusts the distribution of time more closely to the modern needs of the British people.

My plan has been put forward as a basis for discussion, and since good reasons must give place to better, for amendment. It is therefore not a case of the plan, the whole plan and nothing but the plan. Nevertheless the scheme has

been drawn up in conformity with certain principles, and where these are concerned, it cannot be modified or abrogated without destroying the essential unity of the plan and upsetting the balance of The World Calendar.

These basic principles may be summarized as follows:

1. The calendar should be a perpetual calendar in which every day of the solar year is represented on an equal footing.
2. All matters bearing on the distribution of time for secular purposes constitute an integral part of the calendar and should be treated as such.
3. As the calendar is essentially a method of distributing time for secular purposes, it should be drawn up exclusively in the light of secular considerations.
4. The calendar should be designed primarily to meet national needs, but it should be based upon a standard framework, so that it may also serve as a world calendar.
5. Subject to the above requirements, the changes in the existing calendar should be as few and as small as possible.

A calendar drawn up in conformity with these principles necessarily involves considerable changes, but the proposed British calendar is still substantially the old Julian calendar, modified in the light of modern knowledge and experience to meet the needs of the modern world. The calendar in its new form thus represents an evolutionary rather than a revolutionary change, and its adoption does not involve any violent wrench with the past.

Whether a sufficiently strong case exists for revising the calendar, and whether its introduction will be attended with worthwhile benefits are questions that have already been answered by students of the subject. It has been my part to set forth the relevant facts, extenuating nothing and setting down naught without chapter and verse, and it is left to others to examine the facts and to form their own conclusions. But a favorable verdict is important, since no reform of the calendar is possible unless it commands a substantial measure of public approval.

This fact constitutes an imponderable difficulty, for it must be admitted that there is not and there never has been in Great Britain any overwhelming popular demand for the reform of the calendar, except the desire for a fixed and stabilized Easter. In fact, there are people in my country to whom any proposals for revising the calendar seem peculiarly apt to arouse opposition, and the cry of "Give us back our eleven days" in 1752 has still its counterpart today in the objections raised to daylight-saving time on the ground that it involves "fooling with God's time" or "interfering with Nature's laws." Some people appear to regard the calendar as sacrosanct, while others better acquainted with its history and functions are reluctant to meddle with so time-honored an institution, despite its obvious imperfections.

In these circumstances, the fate of calendar reform is likely to depend upon the value attached to its benefits. These, we have seen, are considerable, but unfortunately they are not readily capable of statistical appraisement.

However, the benefits accruing from the substitution of a fixed calendar in place of a movable one are unquestionably substantial. The value to industry and labor cannot be doubted, not only in respect to installing months of almost uniform length but also in the establishment of quarters lasting precisely 13 weeks, with the last day of each quarter

coinciding invariably with the last working day of the week and of the month.

There can indeed be few walks of life in which the use of the new calendar will not result in appreciable savings.* If we assume that this saving is as small as one minute per working day (which is almost a *reductio ad absurdam*), this means a saving in England and Wales alone of about 20 million hours per year. Anybody's estimate may be wide of the mark, but whether it proves an understatement or an overstatement, the time thus saved will clearly go some way to counterbalance the recommended increase in summer holidays.

It is even more difficult to express in precise terms the value of the amenities, in respect to health, well-being and social betterment, provided by the new calendar. If, as I have suggested, it gives the British people five long week-end holidays at fixed and regular intervals during the summer, doubling their present allowance of recreational time, this item alone is well worth while.

A reform capable of contributing in this manner to the social and economic well-being of the community has some claim to be regarded as a measure of social security. Indeed, just as the Beveridge scheme is a method of distributing wealth in the best interest of the nation, so this proposal is a method of distributing time in the manner best suited to the needs of the community. But calendar reform, apart from its more restricted scope, differs from most other schemes for post-war reconstruction by reason of the fact that it has no financial implications. It isn't going to cost anybody anything. Its practicability is, in consequence, not sicklied o'er with the pale cast of thought in regard to the financial difficulties of the nations. On this account there is nothing to prevent the plan being taken into immediate consideration. And there is another reason why the introduction of the new calendar should not be deferred. It is generally agreed that it will not be possible in England to finance the costly schemes for industrial and social reconstruction, except on a wave of reviving prosperity, associated with increased production and increased exports, and hence it is a matter of vital importance that the hindrances to trade, commerce and industry occasioned by the existing calendar should be removed as soon as possible.

Finally, no more favorable moment than the present for revising the calendar is ever likely to occur. The spirit of reform and standardization is in the air, and high hopes are entertained of making the brave new world a happier, healthier and altogether better place to live in. Surely a small but useful step in this direction would be to revise the calendar, so that man can make the best and most profitable use of the limited time at his disposal for work and for play. Surely to do so is not only a necessary and rational act, but in very truth a timely act.

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* From the Journal of the London Chamber of Commerce: "In view of the importance now attached to statistics, and when all manner of new ideas are adopted to simplify and speed up business, it is surprising how many business men are content to jog along with our present cumbersome calendar, complicating, as it does, business which is already quite complicated enough. It must be obvious that our calendar is hopelessly unsuited to modern needs. The London Chamber has long recognized this and the advantages which would be gained from adoption of a rational system. One cannot help but think that the reform will come sooner or later, and so far as business is concerned, the sooner the better."

TIME IS OF THE ESSENCE

By Alfred Ogram, Atlanta, Georgia

To an audience of business men, Mr. Ogram sums up his subject in the following words: "Today, as always in human history, time is of the essence. Our calendar is the outstanding antique of modern civilization, and antiques, though interesting as museum pieces, are seldom very useful. Obviously, a change to a calendar that will meet adequately and efficiently the needs of the modern world is very much past due. Let us then all give our support to the globe-wide adoption of The World Calendar on 1 January 1956, which will usher in a new era of harmony and usefulness, bringing with it a brighter, happier world of human brotherhood and understanding."

TO primitive man, the vitally important telling of time must have been a serious problem, as indeed it is with us today. Most of the trouble lies in the fact that the three natural measures of time are not even multiples or divisions of each other: the earth turns on its axis once per day; the moon revolves about the earth in 29.531 days; and the earth journeys around the sun in 365.242 days, or 12.368 moons—the three latter figures being only approximations, since they would never come out exactly even.

Man's first time unit was undoubtedly the day, it being the most obvious. Besides, it met all immediate needs as to yesterday, today, and tomorrow. That was about as much as our earliest ancestor could master as to time relations. His brighter descendants, however, soon learned to count additional days up to ten by the finger method. This was quickly extended—maybe in a few thousand years—to include the ten toes and even the second and third series of fingers and toes.

Such complicated counting, though, was giving the timekeeper his own peculiar troubles. Was today the second set of fingers, plus the first set of toes, plus three toes after the day he killed the big black bear? Or was it four-toe day on the second go-round? Or was it that many days after the Chief captured his last wife? Frankly, he wasn't sure. That much counting took more concentration than he was able to give, what with his work-a-day business of catching enough meat to keep from starving. Besides, it made him sleepy to count so much. There should be an easier way. Then he looked at the moon. Here was the seemingly perfect solution. No longer was there need to count more than two sets of fingers plus one of toes, and, furthermore, he had

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During his career as an engineer Mr. Ogram was for many years in the federal hydrographic and geodetic service, pioneering in the use of sonic devices for mapping the waters of the West Indies. He now lives in Atlanta, and in his leisure time is a popular lecturer in Georgia and Florida. This address on calendar reform has been successfully used several times before service clubs and other groups.

a dependable time of orientation, the new moon, instead of some easily confused human event.

Certainly, that alternately waxing and waning wanderer of the sky seemed made for his purpose. It was so easy now to count the dark moons, plus a day or so, from event to event, and he was shortly able—after a few more thousand years—to schedule vital future happenings, such as the birth of his young, or perhaps the arrangement of a hunting expedition with a friend. "I'll meet you at the river bend on the next full moon," and it was a date, accurately set as to time and place for both parties.

Counting time was easy now: new moon, one set of fingers, one set of toes, another set of fingers, and, lo and behold, another new moon. In between, too, were the other three phases if one lost count of the days. Of course, he noted that these black moons seemed to come a day early once in a while, but probably cast the fact aside thinking that it was an error in counting on those worrisome fingers. His successors, however, verified his observations and began alternating 30-day months with those containing only 29.

As ages passed, man settled down and became agrarian in fertile valleys like the Nile and the Euphrates. Farming brought quite an improvement in living, but with it came new problems for the timekeeper. Disastrous droughts and killing frosts descended upon the crops at recurrent intervals, not only wasting labor and seed, but bringing dire famine as well. Was there a way to foretell the end of these evil periods and thus know when it was safe to plant the grain? Some said there was. Had not the early risers noticed that the bright star, Sirius, rose with the Sun on the same day that the Nile overflowed its banks, breaking the long drought?

If the timekeeper would just watch this star, as it seemed to move toward and away from the Sun, perhaps a table of days could be made which would foretell the next common appearance of Sirius and Sun. Furthermore, the Sun itself didn't rise every day in the same place, as viewed successively day by day from a given location. It seemed to wander regularly from its extreme right hand position slowly left to a certain point, then reverse its movement and swing back to its farthest right position again. And it always seemed to begin its left hand motion just a few days before the simultaneous rising of Sirius and Sun, which recurred every 365 days. Now man had two signals for the coming of the life-giving floods.

Thus far, conjecture has furnished the story of timekeeping as it developed under the slow but steady stimulus of human need. At least, we know that time relations had received a lot of attention from ancient man, because the hazy dawn of history finds the calendar almost full blown in Egypt as early as 4236 B.C. The influence of the moon was still apparent in the retention of 12 months, but exact correlation had been abandoned, since all 12 months had 30 days each. This accounted for 360 days of the year, the other five being added at the year-end as feast days during which all activities were suspended. They belonged to no month and were dedicated to the pagan gods of the era.

The important thing about this calendar was the attempt at solar control and its superiority over lunar timekeeping. To the Egyptian, time was even more of

the essence of living than it had been to his predecessors. The new unit of time, the year, was the very foundation of his civilization. But, with its adoption, new problems of timekeeping arose—problems that were so complex as to leave the way open for the priesthood to relieve the citizenry of the responsibility for their solution. Thus, the Egyptian priests, promising security, became the first bureaucrats of history, and their control over the calendar was to become absolute—as well as highly remunerative to themselves.

Since their calendar contained only 365 days, or about a quarter-day short of the solar year, it gradually got out of step with the seasons. In one hundred years, the error amounted to 24 days. As time went on, it got worse until, 1,461 years later, the calendar again conincided, and the first of the year, our 19 July, occurred once more with the common rising of Sirius and the Nile. In the process, though, a whole year had been lost.

The priests, of course, knew what was happening, and this knowledge brought the "campaign" funds with which to continue themselves in office.

In the meantime, calendars were being developed in other parts of the world—but always under the stimulus of need. Necessity seems eternally to have been the mother of invention with respect to timekeeping. The seasonal problems of Sumeria and India differed from those of Egypt, and, as a result, their calendars grew on a strictly lunar base. Thus, a Sumerian derivative, the Jewish calendar—which incidentally, is still in use today—consists of 12 lunar months, plus an extra month every so often according to a schedule which repeats itself in a 19-year cycle. Considering its antiquity, it is remarkably accurate, though not very useful for modern living.

Another derivative of Sumerian culture, the Babylonian calendar, gave us our seven-day week. In this instance, though, human need seems to have gone unanswered, notwithstanding the fact that the astrologers, who controlled the calendar, did their best to oblige—charging, of course, accordingly. These bureaucratic fakirs pretended that by assigning each hour of the day to one of the so-called planets of the ancient world, beginning with the most distant one, it was possible to foretell future events—even those of a personal nature.

Timekeeping in ancient Greece seems to have come under the influence of several of the earlier systems. At any rate, the calendar business seems to have flourished there. Every little state had a schedule of its own, with none of them being very good. One would think that the philosophers were trying to compensate for lack of quality by furnishing quantity. No two of them were alike and a traveler of the era had to change his calendar from place to place, much as we now change our watches on our way across the continent. The wonder is that anyone ever got to the games on time.

Moving on to early Rome, we find perhaps the most unusual calendar of all, consisting of only ten months. But, again, the needs of time and place were apparently met. Rome's climate allowed only a 295-day growing season—the rest of the year being agriculturally inactive. So, the people, being fresh from the northern forests, apparently hibernated for the winter like their animal associates of old. The year began with March and ended

with December. Even today, we retain the marks of this ancient calendar in the names of the last four months of the year: September, October, November, and December, or Latin for the seventh, eighth, ninth, and tenth months—although we know them as the ninth, tenth, eleventh, and twelfth months.

The design of the Roman calendar, with its calends, ides, and nones, was so complicated that it would have done even a modern bureaucrat proud. It certainly was not for ordinary folk to calculate. So, as may have been expected, its control was left up to an official, Pontifex Maximus, a sort of civil priest, who soon learned to use it to the advantage of himself and his friends. With a little finagling as to the beginning of the month, or perhaps an extra month now and then, debts and interest became the playthings of the calendar manipulators.

Incidentally, our word "calendar" comes from the Latin "calend," or first of the month, when all debts were payable. Thus, the first "calendar" was a schedule showing when money was due, and if you could contact the right five per center, you could collect a few days earlier than normal. It was crooked business and it didn't get any better as things went on.

In fact, by Julius Caesar's time, the calendar had become so much at variance with the seasons because of the mink coat deals that something had to be done. Sosigenes, an Alexandrian astronomer, was hired for the job, and the new Julian calendar of 365¼ days was established. Spring was returned once more to its proper place and every fourth year made a leap year after the pattern of the Egyptian calendar. The year of the change, 46 B.C. was 445 days long, and certainly could not have been much of an improvement over past bureaucratic bungling. It is said to have been known as the "year of confusion" by Caesar's enemies, but as the "last year of confusion" by his friends. At any rate, when the new year dawned, the calendar was again straight with the seasons, and, to commemorate the event, the fifth month (our seventh) bore the name of the man responsible: July. A few months later, during the ides of March, Julius was assassinated, but—Shakespeare to the contrary notwithstanding—the good that he did lived after him for 1,600 years before another important change in the calendar was indicated.

Shortly after Julius' death, however, bungling officials intentionally or otherwise misinterpreted the leap-year rule, and Augustus Caesar found it necessary to make a minor correction in order to bring the calendar back to the Julian schedule. In so doing, he felt that a month should be named for him, choosing the sixth, which became August. Then he noticed that his month had only 30 days—one day less than the one assigned to Julius. Besides, 30 was considered an unlucky number. So, to please his vanity and get straight with evil spirits, he reshuffled the lengths of several months, giving August 31 days. That explains why July and August are the only adjacent months of the year having 31 days and, incidentally, why February has only 28. Later, when a succeeding Caesar was offered the name of a month in his honor, he cast the opportunity aside with the facetious remark, "And what is going to happen when there are thirteen Caesars?" At any rate, that is one account of it. There are others, so, again, you can take your choice. After

all, historians are human, and have been known to warp events to suit their fancies.

Another point of interest concerning the Julian calendar, which seems to have some support in fact, refers to the allegation that Sosigenes knew, even at the time of adoption, that 365¼ days to the year was not exactly correct, but he thought it sufficiently accurate for the crude, uncivilized Romans who had only recently emerged from the northern woods.

As the years went on, the slight error of the Julian calendar began to accumulate, and, by the time of Pope Gregory XIII, it amounted to ten days, playing tricks with Easter. To put the holiday in the right moon again, he, in 1582, ordered two changes in the calendar: the vernal equinox was set at 21 March and three leap years were to be dropped every 400 years. The beginning of the new year was to be standardized on 1 January instead of various dates.

The Roman Catholic countries at once conformed, but not the Greek Orthodox and Protestant countries. England and the colonies demurred until 1750, by which time the error had accumulated another day. As a consequence, and by act of Parliament, Wednesday, 2 September 1752, was followed immediately by Thursday, 14 September 1752. Even then, there was no public reference to Pope Gregory. The new calendar was simply labeled "New Style." Regardless of this precaution, however, there was rioting and bloodshed over the change. The ignorant could not understand the apparent loss of eleven days and thought that they were being robbed of that much of their lives. Nor did the change in the beginning of the year lessen the confusion, as is shown by George Washington's birth-date. It may be given as either 11 February 1731 or 22 February 1732, both dates being correct notwithstanding their appearance of being a year apart.

The Gregorian calendar, although now adopted by most Western nations, is by no means universal. The old Julian calendar is still used by the Orthodox Church, which explains why they are just celebrating Christmas after we have already finished with New Year's. The ancient Hebrew calendar also has quite a following, notwithstanding the fact that its irregular thirteenth month is poorly adapted to the needs of the modern world of today. The Moslems continue to use a strictly lunar schedule, by which, if we started using it now, Christmas would soon be coming in July as to season. This is quite a disappointment when it is remembered that early Mohammedan learning contributed so much to modern science in the form of mathematics and astronomy.

The lack of universality in our present calendars would seem to present a definite need for improvement. Where so many calendars are in use, that, in itself, would seem to indicate that no one of them is outstandingly better than the others. All have defects, the Gregorian calendar being no exception. Although the slight error in the length of the year, about one day in 3,323 years, is of small consequence, the internal arrangement is so poor that the need for revision was seriously recommended as early as 1834. Furthermore, in 1926, the League of Nations had under consideration 185 plans for calendar reformation from 33 different countries. Chambers of commerce have been advocating a change since

1910. All well-informed persons, who have given the subject serious thought, seem agreed that our present calendar is confusing, time consuming, and costly to every one of us, whether we realize it or not.

The principal defects of our present calendar are as follows:

1. The days of the month rotate through the days of the week in succeeding years, causing seven types of common year and seven types of leap year. Altogether, there are, then, 14 types of year which occur in a cycle that does not repeat itself for 400 years.

2. Neither the halves nor the quarters of the year by months contain the same number of days. In common years, the two halves consist of 181 and 184 days, while in leap years the halves are 182 and 184 days respectively. The four quarters in common years contain 90, 91, 92, and 92 days, but in leap years, 91, 91, 92, and 92 days respectively. Thus, comparisons between halves or quarters for statistical purposes are impossible without adjustment for varying length.

3. There are 28 different kinds of months, since they may be 28, 29, 30, or 31 days long, and any month may begin on any day of the week. Thus, the number of working days vary, not only from month to month, but also within the same month from year to year. Consequently, accurate statistical comparisons cannot be made between months without adjustment for varying length.

4. There is no regularity of dates and days from month to month, or from year to year. A given date will wander through the entire week, while holidays fixed to certain days of the week or the moon, such as Thanksgiving day or Easter, wander over the interval of several days. Easter can occur on 35 possible dates. Other holidays meander inefficiently from Sunday to the middle of the week and back again, causing untold confusion and expense to everyone. It is estimated that isolated holidays during 1952 will cost the workers of our country a loss of over $461,000,000 due to shutdowns and absenteeism alone. Transportation concerns annually spend millions of dollars for the devising and printing of new schedules necessitated by the yearly shift of Sundays and holidays.

No organization or individual escapes the trouble and expense brought about by the inadequacy of the Gregorian calendar. These bothersome and costly irregularities in our present timekeeping system could be easily eliminated by the adoption of the proposed World Calendar, which has the following salient features:

1. Retention of the basic 12 monthly divisions, allowing the easy division of the year into halves, thirds, quarters, sixths, and twelfths.

2. Every year is the same, any given date always falling on the same day of the week.

3. The quarters are equal, each being exactly 91 days, 13 weeks, or 3 months long. The quarters are identical in form, the first month of each beginning on a Sunday, the second on a Wednesday, and the third on a Friday, the sequence of lengths being 31, 30, and 30 days.

4. Since the quarters are equal and identical, the halves are also.

5. Each calendar year begins on a Sunday, 1 January; each working year begins on a Monday, 2 January.

6. Each month has the same number of work-days: 26.

7. The calendar is stabilized and made perpetual by ending the normal year with the 365th day as an international holiday to be known as Worldsday, which would follow 30 December, but belong to no month. Leapyear Day similarly would follow 30 June as another international holiday in those years necessitating 366 days for perpetuity.

8. Days and dates always agree from year to year and civil holidays are fixed. Many of the religious holidays also would automatically become fixed. The others, such as Easter, would be left to the respective religious authorities for placement. It is hoped, however, that even these can be stabilized by cooperative agreement. After all, in every instance, it can be shown that the present method of reckoning was established by arbitrary procedure, and that the day as now observed bears little or no relation to the actual event commemorated.

9. As to working days, all years, halves, quarters, and months will be completely comparable with similar units.

10. There will be only three kinds of months.

The date proposed for the adoption of The World Calendar is Sunday, 1 January 1956, the next date on which the present and proposed calendars coincide. Support for The World Calendar has come from responsible organizations and individuals in every walk of life. Chambers of commerce, scientific bodies, labor unions, educational associations, service clubs, and business organizations all have expressed need for the change. Seventeen national governments have already approved it, and the civilized world is only waiting for one of the major powers to sponsor its universal use.

The official attitude of the American government has been provokingly apathetic. But it might easily change under the new administration. As far back as 1934, the report of a Presidential Research Committee supplied the basis for a more aggressive policy. The report said:

"Statistical errors due to calendar irregularities are not merely quantitative (resulting from the differing lengths of the periods into which our year is divided), but qualitative as well. That is, they result from the fact that the weekday composition of the divisions of the calendar varies within the year, and holidays are differently distributed. Correctional adjustments are often difficult and sometimes impossible.

"It is not expected that habits of mind so thoroughly grounded in the tradition of centuries as those relating to the calendar may be lightly, easily or quickly changed. But the non-comparability of many statistical data resulting from this cause should be recognized, and the influence of the federal government should be thrown behind movements which may ultimately lead to its correction."

Time is still of the essence. As life becomes more complex, the indication for a more efficient and harmonious timekeeping system becomes increasingly urgent. Our present system primarily dates back to the time of the Egyptian calendar, nearly 6,000 years ago, or perhaps 2,000 years to Julius Caesar, when the fastest thing on wheels was a single-axled chariot, and everyone was quite sure that the world was flat. Let us, then all give our support to the globe-wide adoption of The World Calendar on 1 January 1956, which will usher in a new era of harmony and usefulness.

ACROSS THE CENTURIES

An Address by G. E. Johnson, Jamestown, N. Y.

MOST of us take our calendar pretty much for granted. It is a matter of such everyday utility that we have come to accept it as something that just came into existence without much effort or forethought and has been handed down from generation to generation. We don't stop to ask ourselves whether it is perfect or imperfect. When New Year's comes around we give only a fleeting look at the fine examples of the printer's handicraft that come to us through the generosity and thoughtfulness of our insurance agent or some other advertiser, expressing his good will and his eagerness to serve us.

Yet the most casual examination of this tabulation of the approaching year should suggest to our minds a number of questions. Why is there such irregularity in the length and arrangement of the months? Why is February so short? Why does it have an extra day in certain years?

The names of the months give rise to some perplexing questions. We know that September is derived from the Latin word for seven and yet September is not the seventh month in our calendar, nor is October the eighth, November the ninth nor December the tenth month.

These and many other calendar questions lead us far afield into the realms of history, astronomy, religion, mythology, politics, agriculture and similar areas of human knowledge and endeavor. Superstition and the almost universal public aversion to any change in traditional habits have left deep imprints on our system of time measurement.

The calendar is the outgrowth of man's endeavor to chart the orderly recurrence of natural phenomena and to provide a convenient tool or guide for the conduct of his numerous and diverse activities. Its origin is obscure.

There are two details of our present calendar which seem to come in for unanimous criticism. Since a year of 365 or 366 days is not divisible evenly by the seven-day week it naturally follows that each new year begins one or two days later than the opening day of the preceding year. The other unfavorable detail is the variation in the length of the months. These two irregularities result in endless and perpetual confusion in planning schedules of regular events and in preparing statistics for comparative purposes.

If the year contained exactly 364 days or 52 weeks of seven days each, it would be a simple matter to stabilize the calendar so that each year would begin on the same day of the week and each year would compare uniformly with every other year. An Italian priest, Marco Mastrofini, in 1834 proposed that the 365th day be designated as an extra-calendrical day to follow Saturday, 31 December, and precede Sunday, 1 January. Hence the closing week of the year would contain eight days instead of the customary seven. In

leap years two such days would be inserted. Mastrofini proposed no remedy for the irregularities of the months, but other reformers have taken care of this matter.

The proposed World Calendar has only three different kinds of months, instead of the 28 different kinds we now have under the Gregorian calendar. With only three different patterns, it will become fairly easy to memorize the calendar. Under the Gregorian calendar we have 14 different kinds of years. Under The World Calendar each year is like every other year.

Holidays will regularly fall on the same day of the week and of the month, year after year. This great improvement will eventually lead to the fixing of holidays as far as possible on either Monday or Friday—to eliminate the disruption of the week which occurs when a holiday is isolated on a Tuesday, Wednesday or Thursday.

Transition to a new calendar can best be made at a time when 1 January falls on Sunday; and this will next occur on 1 January 1956. Proponents of The World Calendar hope that agreement can be reached in the United Nations and ratifying action taken by the legislative bodies of its constituent members in time to make such a change in 1956.

In the business world, records and statistics are indispensable. Operating and financial reports are generally prepared on the basis of monthly and quarterly periods. Under the present Gregorian calendar there is no uniformity in either months or quarters. The World Calendar would provide four quarters of identical composition, and quite obviously would permit a more accurate basis of comparison for statistical purposes. A calendar having holidays on the same day of the week and month in each year with perpetual regularity would immensely facilitate the establishment of transportation schedules, school and college schedules, religious observances, and all events of annual repetitions.*

Opposition to change is a natural human reaction. Certain minor religious groups oppose any change that would break the sequence of the seven-day week. The week of seven days as presently observed was introduced in the fourth century by edict of the Emperor Constantine, who recognized Sunday as the first day of the week, and, by associating it with a significant religious event, set it aside as the Christian day of worship.

In the matter of a change as widespread in its effect as a calendar reform we find a rather interesting parallel in the adoption of Standard Time which took place less than 70 years ago. Prior to that time there were a hundred different time zones in the United States. A traveler going from a point on the Atlantic seaboard to a point on the Pacific coast would change his watch about 20 times if he wished to

*As one of the most important mechanisms of every-day life, the calendar ranks with transportation and communication in its capacity to facilitate the activities of human beings. Along with the chronometer, it is the chief time-reckoning device we have at our disposal. As a universal convenience, it can be classed with the radio, telephone, typewriter and automobile . . . One of the characteristics of such every-day conveniences is that, as they are being used, they are constantly being modernized or improved. The wider their use, the more rapid and fundamental should be their advance toward perfection. The world is their proving ground. A simpler, more efficient, more uniform operation is required of all mechanical aids in this modern era. Hence the movement for calendar reform. Its ultimate success is necessary and inevitable.—Clifford W. Smith, Electrical Engineer, New York City.

keep correct railroad time. Railroad centers like Chicago, Kansas City or Buffalo had as many different time standards as they had railroads entering the city. In the Buffalo station there were three clocks —one set to New York time for the New York Central; one set to Columbus time for the Lake Shore and other railroads; and the other clock was set to local Buffalo time. Such chaotic conditions eventually proved intolerable and the railroads took it upon themselves to agree upon and place in effect the four Standard Time zones we have had across the nation since then—Eastern, Central, Mountain and Pacific Standard Time. Sunday, 18 November 1883, was the day on which the railroads made the momentous change.*

*I recall the long series of international jealousies which preceded the adoption of Standard Time. A hundred years of bickering, needless and stupid, finally came to an end. And with the final agreement was closed a long chapter of anarchy in connection with the meridians. During the period of anarchy, every nation, no matter how unimportant, claimed to have its own meridian, as if this was an integral part of its national sovereignty . . . Finally reason triumphed. They all stopped using their own meridians, and accepted as their standards the meridian passing through the observatory at Greenwich. The advantages of this reform have been extraordinary . . . What do we owe to Standard Time? Only because of it can a man set his watch, wherever he may be, and know that he carries a time which is universal for the whole world, changing in hourly intervals at distances approximating the course of the sun . . . Why should we not regularize in similar fashion the dates of the calendar? Why should we not regularize our holidays, national and international? The day will surely come, for unquestionably the orderly administration of the reduced space and the imperceptible time in which we live our little lives, is far more important than the foolish aims on which the dictators and supermen of international politics waste their energies . . . Personally I would like to see the whole world devote its time and effort to reforming the calendar. Such a crusade might serve to quiet the spirit of mischief that is dominating the world and its leaders.—Dr. Juan Montiel, Buenos Aires.

The remainder of the nation soon fell in line with the sensible orderly arrangement—but only after many persons had registered their opposition, some rather bitterly.

To those who have struggled with the irregularities and inadequacies of the present calendar, it seems inevitable that a change as simple and beneficial as the proposed World Calendar is bound to come. Establishment of the four zones of Standard Time across the nation from the Atlantic to the Pacific evoked no spontaneous sense of urgency in times when the Pony Express was the fastest known medium of communication or transportation. A variation of a few minutes or even an hour between communities was of no particular consequence. Invention of the telegraph, the telephone and development of the transcontinental railway system changed all this.

That the Gregorian calendar has served as well as it has during the past four centuries testifies to the wisdom, scientific knowledge and remarkable foresight of its authors. I would not for a moment detract from their outstanding accomplishment. However, in the light of the marvelous advancement during these 400 years in the fields of transportation, communication and other avenues of human endeavor it would seem quite appropriate to examine the calendar which we are now using to determine if revision does not merit our earnest consideration.

I feel confident that, when adopted, The World Calendar will very quickly win universal approval on its own merits because of its more orderly, systematic and convenient arrangement and because it better serves the needs of this and future generations.

RECENT CALENDAR RESEARCH

As Seen from Ireland

(Irish Times, Dublin)

IT would be stupid to exaggerate the importance of calendar defects. But the point is that we all endure certain definite disadvantages and forego certain definite advantages in retaining the present calendar. And all for no other reason than that we instinctively dislike change.

The suggested new calendar differs very little from that now in use. Yet it would mean enormous savings in time, money and statistical accuracy.

This calendar is being vigorously recommended at the United Nations, for adoption by all nations in 1956. In that year, because of a convenient coincidence of dates, the changeover could be made with almost no disturbance. Thenceforward the calendar would be the same for every year, with the same date falling on the same weekday, year in and year out.

Before the lovers of the odd, untidy and unexpected pounce upon us and drub us for our dullness and fondness for uniformity, let us examine some of the more obvious defects of our present calendar, and weigh them against the advantages of the new.

If you are arranging a journey, a business meeting, a school program or an office schedule—for this year, next year or any year—you have to consult a calendar to discover if the date clashes with the weekday that may make the fixture impossible (for example, a Sunday or a holiday). On the other hand, if you settle for a Wednesday, it may turn out to be 25 December, or some other inconvenient month-date.

At first glance this may not seem a great hardship, but in its numerous and repeated applications it is highly important, and certainly an unnecessary burden. Looked at from the viewpoint of production, holidays that break into the working weeks are costly and at the same time are not as beneficial as those which fall into week-ends. Businessmen find accounting difficult under the present calendar. Comparison of figures for various calendar periods are inaccurate. Statistics lose their significance.

Under the proposed change, there would be one unvarying calendar from year to year, dates and weekdays would always fall in the same way together. Every part of the year—quarter, month or week—would be more exactly comparable for statistical purposes with the corresponding segments of another year.

One of the principal arguments for the change is the substantial financial savings which would result. It is calculated that in the United States alone the stabilization of holidays would result in additional production of at least $450,000,000 annually. This is a staggering figure, and of course is only one of several financial benefits from the proposed reform.

It may truthfully be said that the only obstacle to the change is human inertia, and a failure to realize the serious issues involved.

Accountancy Problems

By HAROLD WATKINS, M.B.E.

(Abstracted from London Weekly Accountant)

WHEN it comes to statistical analysis in terms of months, every accountant knows the problems that face him because of the irregular calendar. We have no fewer than 28 different month-patterns, and four different week-end patterns. Any 30-day or 31-day month may have four Saturdays and four Sundays; or four Saturdays and five Sundays; or five Saturdays and four Sundays, or finally five Saturdays and five Sundays. The number of weekdays can vary

from 24 in a normal February to 27 in a 31-day month. And, of course, the same month will vary in its content of weekdays from year to year, depending entirely on the day of the week on which it begins.

A great variety of methods are used to make approximate correction of these irregularities. They serve to show how complex is the application of the calendar to anything beyond everyday purposes, and how desirable it is that it should be rationalized.

The simple solution seems to be general adoption of one of the scientific reforms which have been put forward with varying vigor over the last fifty years and more. Most practical of these is the 12-month, equal-quarter calendar backed by The World Calendar Association. In this, the disturbing 365th day is made a dateless day at the end of December and treated as a universal holiday; and the leap-year day dealt with in the same way at the end of June each fourth year. It divides the year into four months of 31 days and eight of 30, running in regular sequence of 31, 30, 30 for each quarter.

Every quarter is the same except that at the end of December there is a day which comes *between Saturday and Sunday* (which it is proposed to call Worldsday) and every fourth year a similar day at the end of June (called Leapyear Day). The year and each quarter begins on a Sunday and ends on a Saturday. Every month has exactly 26 weekdays. Only seven dates would change from present usage, and given a start when 1 January falls naturally on a Sunday (as will next occur in 1956) such a calendar would slide into use with no noticeable dislocation, and yet with immense convenience from accounting and statistical viewpoints.

An international economist has noted: "Thus the calendar would become as simple as a foot-rule or a yard-stick to memorize. This would be a great improvement in business and school life. There would be no need to consult a calendar-chart in which each month is at variance with the previous one or the one which follows it, as is the case now. There would be no need of throwing away a calendar at the end of the old year and getting a new one. . . . Under this system the calendar would become a constant measure like a clock, a scale or a tape measure. Advance dates would be more easily remembered, as would past events. Life as a whole might be greatly simplified."

Weekdays In History

By JONATHAN STORY

(In Truth Seeker)

EVERY day of the week has been observed as the Sabbath at various periods in history. Monday by the Greeks, Tuesday by the Persians, Wednesday by the Assyrians, Thursday by the Egyptians, Friday by the Mohammedans, Saturday by the Jews, Sunday by the Christians, as well as by certain pagans prior to the rise of Christianity.

The traditionally unlucky character of the number 13 goes back to the days when man first learned to count. He began by tallying with the ten fingers of his two hands, the origin of the decimal systems. Then, as he progressed, he found 12 easier to use and divide in many ways. But 13, often called "the Devil's dozen," seemed impossible. So it became an outcast, disreputable number. To this day the universal superstition connected with it is recognized by the omission of the number 13 from hotel, hospital and ship rooms, floors in office buildings, and even the street names in many cities.

How did Friday come to be regarded as unlucky? The word Friday comes from a Norse goddess, Freya. She was the heavenly queen of love and fertility, life, winter and death. Her name-day, Friday, was the day for witches' meetings, their Sabbath. Woe unto all humans who followed their own pursuits on Friday instead of observing Freya's festival day! So Friday came to be considered an unlucky day on which to start any project or journey. When it fell on the 13th, it could be doubly unfortunate.

In the romance languages, it is not Friday, but Venus-day. This day became accursed to early Christians because they considered the lascivious rites done publicly on this day in honor of Venus as an affront to their own Virgin.

EXCERPTS AND REVIEWS

Lesson from the Stars

(From the Introduction to the Planetarium Show at Griffith Observatory, Los Angeles)

SINCE the time of Julius Caesar we have had only one major change in our calendar, but another will probably take place during our lifetime.

We need a calendar which is much more convenient than the one we have. This is particularly needed by business institutions, statisticians and accountants. Chambers of Commerce are among those who have been most active in advocating the reform. The calendar of the future, The World Calendar, will be explained as the concluding feature of our Planetarium Show (entitled "The Calendar") this month.

At first thought one is apt to jump at the conclusion that our calendar is not a satisfactory subject for a spectacular astronomical show. He is apt to think that the calendar, although having an astronomical basis, is merely something dull but practical for our everyday lives. However, when he sits in the planetarium theater, he finds himself watching the irregular motion of the moon through the months of the year. He sees the change of position of the sun among the stars, until finally when the year has been completed the sun has come back to the same stars again.

If he has not paid much attention to the phases of the moon, he may be surprised to know that the moon is every bit as much a day-time object as a night-time object. Each 29½ days the moon passes almost between us and the sun, rising with it, crossing the sky with it in the day-time, and setting with the sun. Since the moon has no light of its own, it is, of course, entirely invisible at such times.

As the moon moves on in its monthly path around the earth, it sets on the average of 50 minutes later each night. As a result, two days after New Moon we see a thin crescent in the west during the twilight. The next night the crescent is a little wider and the moon sets later. Approximately one week after the actual New Moon, sunset shows us the half moon on the meridian, and we say that the first quarter of the month has passed. This half moon sets about midnight.

When another week has passed, the moon has moved to a place opposite the sun in the sky, and, of course, the side on which the sun is shining is turned toward the earth. We have Full Moon, which is above the horizon all night long. With another week, the third quarter of the month has passed, and again we have a half moon, but this half moon rises at midnight and comes to the meridian at sunrise. When the 29½ days have ended, the moon has once more caught up with the sun to give us a New Moon.

The motion of the earth around the sun naturally determines the year. However, for primitive people the changes of the moon were much more obvious. They could remember things better from one lunation to the next. Such people almost invariably would measure their shorter intervals of time by the number of moons or months. For longer intervals of time, especially in the Temperate zones, the seasons of snow fixed the year in their minds. Such people automatically attempted to start each month with first view of the crescent moon, but they also attempted to use the year.

Unfortunately, we have about 12½ months as measured by the moon in the course of each year, and from this lack of matching between month and year grew all the antics through which people formerly put their calendars. Some nations met the inequality by having some years 12 months long and other years 13 months long. The Greeks especially worked out some very compli-

cated rules in an attempt to keep their seasons approximately fixed within the year and yet have their new moons occur in a way that seemed proper to them.

As we watch our sun and moon during the show, we shall hear some of the stories of this manipulation and find later how the great general and politician, Julius Caesar, cut the year free from the phases of the moon.

Goal in Sight

By MEL HEIMER
(Central Press Staff Writer)

ELISABETH ACHELIS is a happy woman these days—a happy woman with her fingers crossed. She has worked toward a goal for 22 years, and now that goal is in sight.

Miss Achelis is a Brooklyn-born socialite who back in 1930 set out almost single-handed to bring about a reform of the Gregorian calendar, by which the world now marks its days, its months, its years. She has used every legitimate weapon in the arsenal to bring about that reform, until she has come at last to the United Nations—where next year she hopes and feels sure that action will be taken to make her World Calendar a reality, beginning with the year 1956.

"Twenty-two years," she said in her ninth floor office (headquarters of The World Calendar Association, of which she is president), "and I'd do it all over again. Nobody has any idea of the satisfaction, the feeling of fulfillment this work can give. You really feel you're helping out the world."

Most wise men have agreed over the years that there are flaws in the Gregorian calendar, arranged 2,000 years ago by Julius Caesar and modified slightly by Pope Gregory XIII. It is archaic and creaky and its lack of uniformity makes life uncomfortable for education, religion, the home, governments throughout the world, labor and so on.

Miss Achelis pitched right into the new-calendar idea many years ago, but learned that a committee headed by the late George Eastman, camera magnate, wanted a 13-month calendar. That didn't set right with Elisabeth, and she founded The World Calendar Association in 1930, aimed at installing a new 12-month calendar composed of equal quarters, 91 days in each.

When the movement began, it was (in Miss Achelis' words) "not an auspicious time to begin a new movement." The country was depression-bound. However, she and her associates worked hard and long. By 1935 the Eastman committee had given up the fight, but Miss Achelis' group struggled for a long time with the League of Nations. Then came World War II. And now, with the air at least a little clearer, The World Calendar Association's dream seems nearer realization than ever, with a little cooperation from the UN.

"Basically, deeply, I believe it will knit the world closer together," she says, hopefully. "Having a Worldsday at the end of each year should be the very embodiment of international democracy—a long step toward that ultimate dream of a world in which all men and nations are equal."

Pushing to the Front

By ELISABETH ACHELIS
(In Carthage, Mo., Press)

HERE is a subject which is rapidly coming to the front in international thinking. Our present calendar is highly irregular and inefficient. The proposed changes will make every year's calendar the same. This will mean that some day we will have houses with built-in calendars, permanent decorative features that will be useful and handy. The dials on our clocks are always the same although in design clocks are different. The same will be true with the calendar, in arrangement the same, in design different.

Perfection in a calendar would be desirable, but it is as unattainable as perfection in our everyday lives. Although perfection is unattainable, improvement is possible, and the proposed World Calendar provides the greatest amount of improvement that can be achieved with the least amount of disturbance.

CURRENT PRESS COMMENT

India's Strong Support

Toronto (Canada) Globe and Mail

THIS struggle to simplify and improve the calendar is as difficult and as important as the adoption of Standard Time. Everybody who considers the plan approves of it, but politicians cannot see where it will win votes.

Seventeen nations have agreed, and India has lately come in strong. The great powers do not oppose it: they are merely apathetic.

When adopted, as it is sure to be, The World Calendar will be a practical convenience, saving much time and money for everybody.

Planetarium Program

Los Angeles Times

MAN'S problems in measuring time are being discussed this month in the Griffith Park Observatory's planetarium feature, presented three times daily under the title "Story of the Calendar."

Dr. Dinsmore Alter, director of the observatory, said that the need for a more convenient and less awkward calendar than the one now in use will probably bring about a major change during our lifetime. The World Calendar Association has long advocated a perpetual calendar to be adopted on a world-wide basis.

Calendars in Old America

New York Journal American

IT is 200 years since all who dwelt under the Union Jack went to bed for what was figuratively the longest night in British history. The day after 2 September 1752 became 14 September. Eleven days slipped away in the sleep of those who went to bed in the 13 colonies on our East Coast.

Many European nations had accepted the Gregorian reform more than a century before. In America, the Gregorian calendar had been used in the Spanish, Portuguese and French colonies since 1582.

However, it was not the first calendar ever used on this side of the Atlantic. Long before Columbus, the Mayas and Aztecs had a civil calendar much more accurate than any system devised in Europe. It was divided into periods exactly the same length —an ideal sought in the perpetual World Calendar now being advocated in the United Nations.

Making 1956 Memorable

Saskatchewan Farmer, Regina, Sask.

TODAY calendar reform is definitely on the march. The proposal that presents the most logical, workable and satisfactory solution is The World Calendar—primarily because it involves a minimum of changes in the present system.

The advantages of this scientifically designed revision are too obvious to require argument, and the simplicity of the plan will make its adoption very easy.

Our next leap year, 1956, will be made memorable if it marks the change to a new and more perfect calendar.

Enigma of Time

Reynolds News, London

WHAT is time? One view of modern philosophy holds that time and space do not actually exist. They are merely intellectual abstract concepts. Yet time is certainly something that concerns us, every hour and every day, and it is natural to expect one day to succeed another in the calendar. How could it be otherwise?

It seemed otherwise at least once in English affairs. That was 200 years ago, when September did not contain 30 days, but only 19. The other 11 days disappeared

completely from the calendar. Their absence made that September the most confusing month in English history.

Previously there had been two calendars in Europe, one of them 11 days behind the other. At last in 1751 a bill was passed by Parliament to amend so absurd a state of affairs.

The public was bewildered. Newspapers did what they could to help by publishing ready reckoners showing the deductions that could be made from wages and rents or other contracts. But thousands of people believed that not only were they losing money, but that their lives were being shortened. Never was an Act of Parliament more unpopular. But it did in fact put a stop to the slow drift of the Julian calendar, which would eventually have resulted in Christmas Day falling in midsummer.

Peak Effort for Revision

Kannapolis (N. C.) Independent

THIS 200th anniversary of the calendar is especially significant because it marks a peak effort in the United Nations for a further revision of the calendar.

The current proposal is for approval of The World Calendar by the UN in 1953, with a view to installing the new system internationally in 1956, when both the present Gregorian and the proposed World Calendar coincide.

Seventeen nations have already registered approval of the proposed change. The English-speaking world, however, has not yet taken action on the plan.

100 Years of Agitation

Annuaire Marocain, Paris

CALENDAR reform is a subject which has been agitated in France for more than a century. About 1850 Camille Flammarion brought it sharply before the public eye through an examination in his *Revue* of six different proposals for a new Gregorian calendar. His enthusiasm attracted supporters in increasing numbers for the next half century. By 1900 the subject had gained such importance that all the French universities, academies and chambers of commerce gave it attention and approval.

The period of study and research prolonged itself until about 1925, when Professor Deslandres, director of the Observatory of Meudon, declared that "the subject has been studied from every aspect and the time is now ripe for action—in fact, for adoption of the 12-month equal-quarter project approved by Flammarion and all who have come after him."

Such adoption has been close to realization in France on several occasions, particularly in 1948 when a bill approving The World Calendar was placed on the agenda of the French parliament.

Meeting All Needs

Waukesha (Wis.) Freeman

OUR present calendar, particularly in its role as a social and economic timekeeper, is sadly out of step with our vaunted "practical" civilization. This has been pointed out many times, and its defects need not be listed again. The plan of The World Calendar has been widely circulated. It is a scientific document; it is simple and perpetual; it meets all social and economic as well as astronomical requirements.

Many Advantages

Galley Proof, Boston, Mass.

THIS reformed calendar will have many advantages. Since it is perpetual, all years will be identical (except for the extra day in leap years). With the year divided into four equal and identical quarters, our financial statements, budgetary estimates and statistical surveys can be put on a simplified accurate quarterly basis. Comparisons between any two periods can be drawn with simple unweighted calculations. Furthermore periodic events and holidays can be fixed both as to date and weekday.

Nineteen fifty-six, our next leap year, will be made memorable if it marks the change to a new and better calendar.

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EDITORIAL PARAGRAPHS

At a meeting of the Royal Society of Arts, the Astronomer Royal described The World Calendar as "the only one deserving of serious consideration." With this calendar of perpetual validity, it will be unnecessary to print new calendars or diaries each year. —*Illustrated London News.*

At each session of the Indiana legislature, we have a group of hardy legislators who submit a resolution memorializing Congress to get us a revised calendar.—*Versailles (Ind.) Republican.*

Many advantages are claimed for the new calendar. As quarters and months are equal, official statistics and financial transactions will no longer have to be adjusted to varying monthly and quarterly periods—*Paris Mail.*

Suggestions which would iron out calendar difficulties without serious changes are being urged by The World Calendar Association.—*Louisville Courier-Journal.*

It is the smog of habit and familiarity that hides from us the costly imperfections of our present calendar. Its irregularities are wasteful and unnecessary; the correction of them a simple and easy matter.—*Paris Avenir.*

This Leap Year, 1952, provides an excellent time for thorough consideration of calendar revision.—*Sheboygan (Wis.) Press.*

People keep forgetting that our Gregorian calendar is not the only one in the world. In fact, it is used by only a quarter of the globe's population. All the others measure their time by ancient systems such as the Coptic, the Chinese, the Moslem, the Jewish, the Persian. The nations should get together and agree on a universal plan, simple, perpetual and rational. — *Paris Monde Ouvrier.*

Seventeen nations have formed a nucleus to cooperate in forthright action to place calendar reform on the United Nations agenda.—*Oskaloosa (La.) Herald.*

Revision of the calendar is desirable. At the moment, French enthusiasts are stressing particularly the inconveniences of mid-week holidays.—*Strasbourg Commerciale.*

If adopted, The World Calendar would cure many headaches for business men and statisticians. Holidays would be set on annual unchanging dates and the reliability of comparative figures would be greatly improved.—*Pensacola (Fla.) Journal.*

Calendar reform is a scientific problem, but one that has numerous contacts with our practical everyday life. It is under study at the United Nations, where it will eventually emerge as a project for the active agenda.—*Echo Liberte, Lyon, France.*

This new calendar can save us a world of time, money and headaches.—*Hempstead (N. Y.) Review-Star.*

One of the hardy annuals which those who would tidy up the world keep presenting to their governments is calendar reform. The British Government has said it requires some evidence of public demand before endorsing a new calendar. Taking this precept to heart, The World Calendar Association is setting out to create such a public demand.—*Manchester Guardian.*

Revision of the calendar has become the "order of the day," because the inconveniences of our present system are so frequently demonstrated in modern life.—*Paris Libere.*

Calendar history is long and complicated, but with The World Calendar discussion prevalent it is a timely topic.—*New York Times.*

Although primarily a scientific problem, calendar reform impinges on practical life at points so numerous that it demands current attention.—*Grenoble Reveil.*

The World Calendar Association, Inc., will gratefully receive contributions for furthering its work. Such contributions are tax exempt under Federal and New York State Income Tax laws.



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